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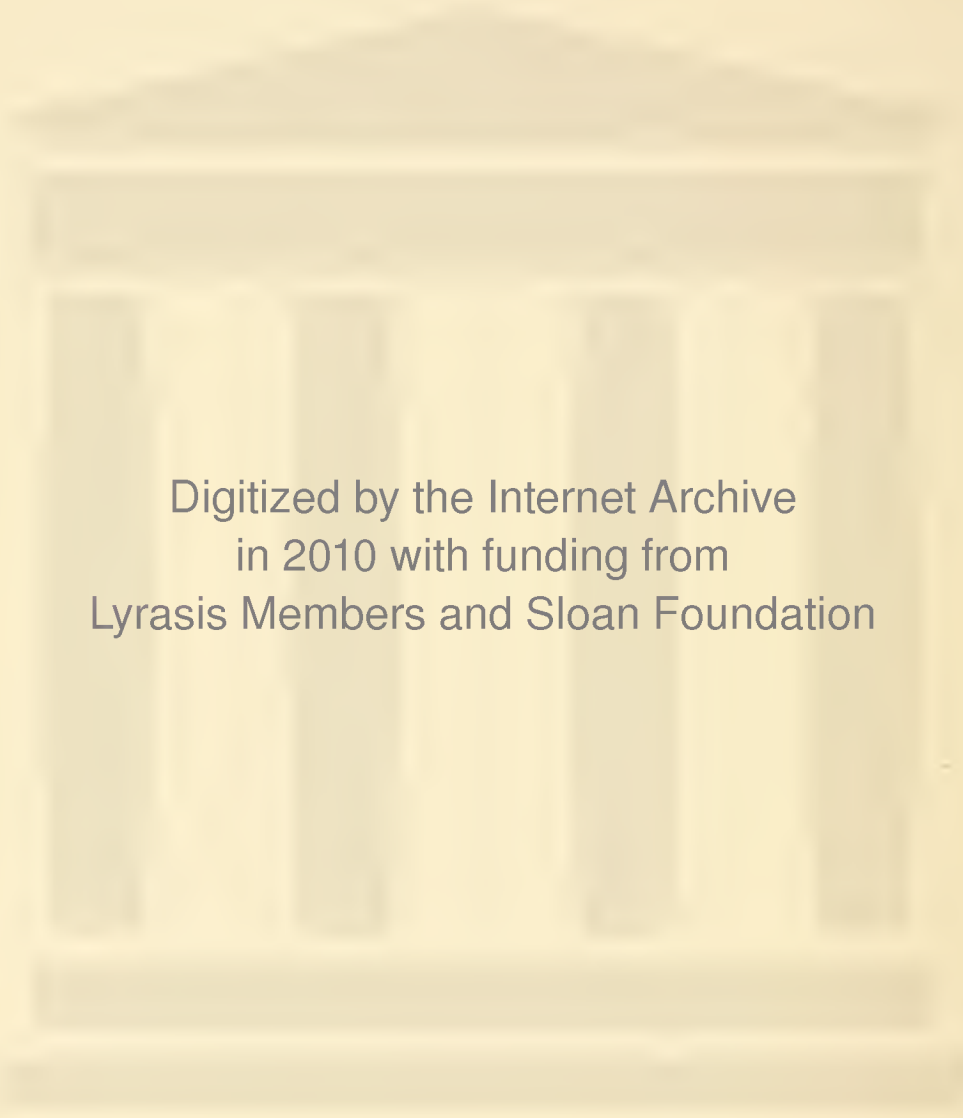
NEW HAVEN COLLEGE

Catalog 1959-60



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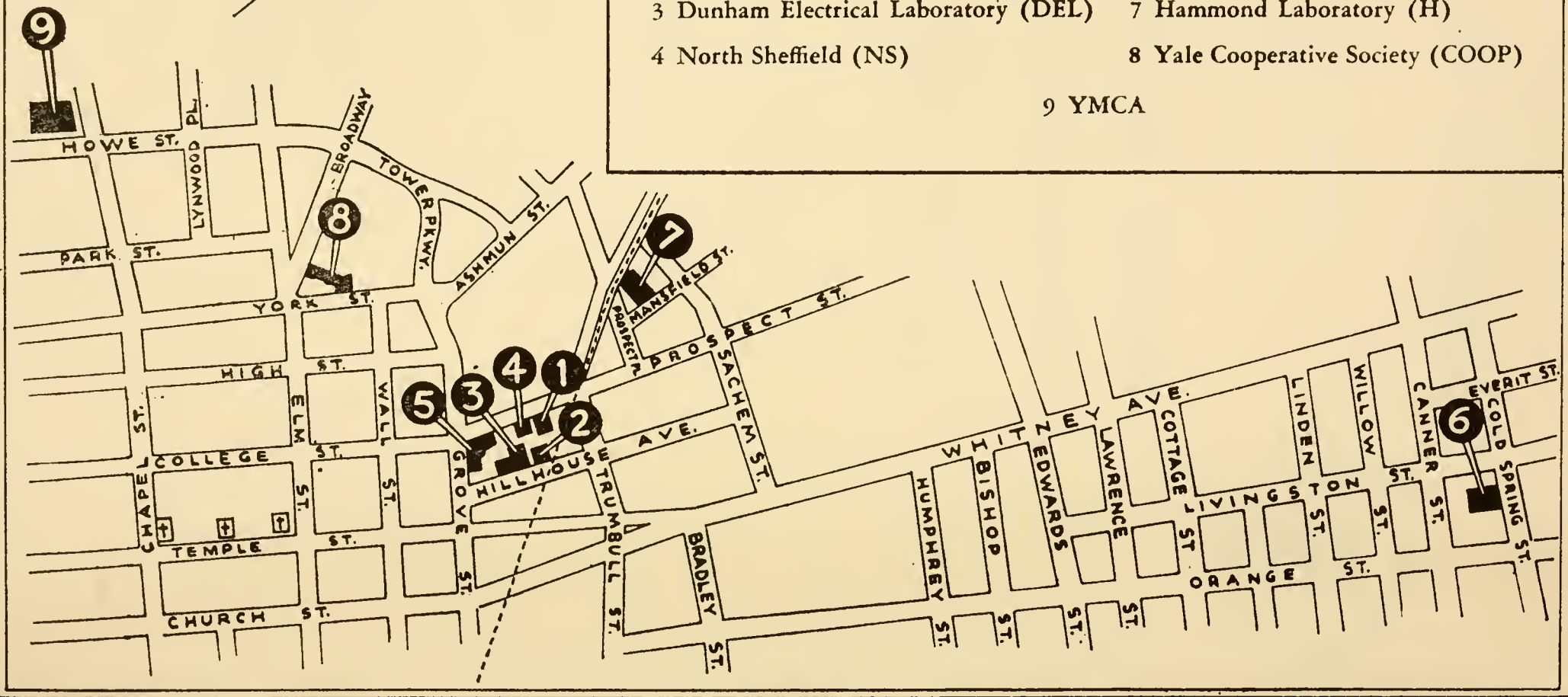
Catalog
1959-1960

New Haven College and Vicinity

1 Engineering Mechanics (EM)
2 Leet Oliver Mem. Hall (LOM)
3 Dunham Electrical Laboratory (DEL)
4 North Sheffield (NS)
5 Strathcona Hall (Sheffield) (S)
6 College Woods Branch (CWB)
7 Hammond Laboratory (H)
8 Yale Cooperative Society (COOP)
9 YMCA



Contents

ACADEMIC CALENDAR FOR 1959-1960 4

BOARDS AND ADMINISTRATIVE STAFF 6

PURPOSES AND HISTORY 9

GENERAL INFORMATION 15

NEW HAVEN COLLEGE 25

The Evening Credit Programs

Calendar 26

Tuition and Fees 32

The Summer Session 36

Associate in Science Programs 38

Bachelor of Science Programs 47

Description of Courses 54

The Daytime Cooperative Program 69

Calendar 70

Tuition and Fees 75

Programs of Study 76

Description of Courses 77

The Daytime Engineering Program 79

Calendar 80

Tuition and Fees 82

Program of Study 82

Description of Courses 83

The College-Industry Engineering Programs . . . 85

THE DIVISION OF SPECIAL STUDIES 87

THE SCHOOL OF EXECUTIVE DEVELOPMENT . . 95

THE READING CENTER 101

NEW HAVEN COLLEGE FACULTY 105

GENERAL INDEX 123

Calendar of All Degree Programs

1959-1960

ECP Evening Credit Program
DEP Daytime Engineering Program
C Daytime Cooperative Program
ALL Applies to all programs

			1959
ALL	Placement Examinations:		
	English examinations	Monday, 7:00 p.m.	June 8
	Psychological examination	Tuesday, 7:00 p.m.	June 9
	Mathematics examination	Tuesday, 8:15 p.m.	June 9
ECP	Summer Session Registration period	Tuesday, Wednesday	June 16, 17
ECP	Summer Session Tuition due on or before	Wednesday	June 17
ECP	Summer Session Classes begin	Monday, 7:00 p.m.	June 22
C	Coop Gr.A Last day of application	Friday	August 14
C	Coop Gr.B Last day of application	Friday	August 28
ALL	Placement Examinations:		
	English examinations	Thursday, 7:00 p.m.	August 27
	Psychological examination	Friday, 7:00 p.m.	August 28
	Mathematics examination	Friday, 8:15 p.m.	August 28
ECP	Registration for current and former students	Monday-Saturday, 12 Noon	August 24-September 5
C	Coop Gr.A Registration	Monday	August 31
C	Coop Gr.A Tuition due	Monday	August 31
C	Coop Gr.A Day classes begin	Monday	August 31
ECP	Summer Session Final examinations end	Wednesday	September 2
ALL	Placement Examinations:		
	Psychological examination	Thursday, 7:00 p.m.	September 3
	Mathematics examination	Thursday, 8:15 p.m.	September 3
ALL	Labor Day (holiday)	Monday	September 7
ECP	Fall Semester Registration for new students	Wednesday-Saturday, 12 Noon	September 9-12
ECP	Tuition due on or before	Saturday, 12 Noon	September 12
C	Coop Gr.B Registration	Saturday	September 12
C	Coop Gr.B Tuition due	Saturday	September 12
ECP	Assembly for new students	Monday, 7:30 p.m.	September 14
DEP	Orientation	Tuesday	September 15
DEP	Tuition due	Tuesday	September 15
DEP	Classes begin	Wednesday	September 16
ECP	Classes begin	Thursday, 7:00 p.m.	September 17
ECP	Last date for admission of former students and transfers	Wednesday	October 7
C	Coop Gr.A Classes end	Friday	November 6
C	Coop Gr.A Work period begins	Monday	November 9
C	Coop Gr.B Classes begin	Monday	November 9
ALL	Thanksgiving (holiday)	Thursday, Friday	November 26, 27
DEP	Christmas recess	Saturday-Sunday	December 19-January 3
ECP	Christmas recess	Thursday-Sunday	December 24-January 3
C	Coop Gr. B Christmas (holiday)	Thursday-Sunday	December 24-27
C	Coop Gr.B New Year (holiday)	Friday-Sunday	December 31-January 3

DEP	Classes resume	Monday	January 4
ECP	Classes resume	Monday, 7:00 p.m.	January 4
ECP	Registration for current and former students	Monday-Saturday, 12 Noon	January 4-16
ALL	Placement Examinations:		
	English examinations	Monday, 7:00 p.m.	January 11
	Psychological examination	Tuesday, 7:00 p.m.	January 12
	Mathematics examination	Tuesday, 8:15 p.m.	January 12
DEP	Final examinations begin	Monday	January 18
DEP	Final examinations end	Friday	January 22
DEP	Recess	Saturday-Sunday	January 23-31
ECP	Final examinations begin	Wednesday	January 13
ECP	Final examinations end	Tuesday	January 19
ECP	Recess	Wednesday-Sunday	January 20-31
ECP	Registration for new students	Wednesday-Saturday, 12 Noon	January 20-23
ECP	Tuition due on or before	Saturday, 12 Noon	January 23
C	Coop Gr.B Classes end	Friday	January 22
C	Coop Gr.B Work period begins	Monday	January 25
C	Coop Gr.A Work period ends	Friday	January 22
C	Coop Gr.A Tuition due	Monday	January 25
C	Coop Gr.A Classes begin	Monday	January 25
DEP	Classes begin	Monday	February 1
DEP	Tuition due	Monday	February 1
ECP	Classes begin	Monday, 7:00 p.m.	February 1
ECP	Last date for admission of former students and transfers	Friday	February 19
ALL	Washington's Birthday (holiday)	Monday	February 22
C	Coop Gr.A Classes end	Friday	April 1
C	Coop Gr.A Work period begins	Monday	April 4
C	Coop Gr.B Work period ends	Friday	April 1
C	Coop Gr.B Tuition due	Monday	April 4
C	Coop Gr.B Classes begin	Monday	April 4
ALL	Good Friday (holiday)	Friday	April 15
ECP	Final examinations begin	Tuesday	May 24
ALL	Memorial Day (holiday)	Monday	May 30
ECP	Final examinations end	Tuesday	May 31
DEP	Final examinations begin	Tuesday	May 31
DEP	Final examinations end	Friday	June 3
C	Coop Gr.A Work period ends	Friday	June 10
C	Coop Gr.B Classes end	Friday	June 10
ALL	Commencement	Sunday	June 12
ALL	Placement Examinations:		
	English examinations	Monday, 7:00 p.m.	June 6
	Psychological examination	Tuesday, 7:00 p.m.	June 7
	Mathematics examination	Tuesday, 8:15 p.m.	June 7
ECP	Summer Session Registration period	Tuesday, Wednesday	June 14, 15
ECP	Summer Session Tuition due on or before	Wednesday	June 15
ECP	Summer Session Classes begin	Monday, 7:00 p.m.	June 20
ECP	Independence Day (holiday)	Monday	July 4
ECP	Summer Session First Term final examinations	Monday	July 25
ECP	Summer Session Second Term classes begin	Wednesday	July 27
ECP	Summer Session Second Term final examinations	Monday	August 29

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PURPOSES and HISTORY

New Haven College, 1959-1960

New Haven College

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Statement of Purposes

New Haven College is an independent, co-educational community college. Its sole aim is to serve the educational needs of the people and institutions within the Southern Connecticut area.

This non-profit, non-sectarian institution serves the people of this area by providing educational opportunities, with particular emphasis on the fields of engineering and business, which best accommodate their needs — those already employed as well as those preparing for employment.

Basically, it offers programs for college-age students preparing themselves for careers, and for already employed adults seeking to further their education. Its programs for college-age students are offered during the daytime. Its programs for employed adults are offered primarily in the evening in order that they can continue their education without affecting their earning power.

New Haven College serves the industries of the Southern Connecticut area by providing them with a pool of educated talent from which they can fill their manpower needs.

It serves the community also by providing a supply of educated, thoughtful citizens who, because of their education, are equipped to fulfill their obligations to their home municipalities, their state and nation.

History

When New Haven College was established in 1920 as a branch of Northeastern University, the concept of a two-year terminal college education still was radically new. In the intervening decades, however, the concept of a two-year college program for people unable for financial or other reasons to leave home or to embark on a four-year college course and yet anxious to continue their education beyond the high school level has found nation-wide acceptance. New Haven College is a pioneer in the community college program.

By act of the Connecticut General Assembly, the state legislature, New Haven College was incorporated in 1926 as an independent college. Simultaneously, it negotiated an agreement with Yale under which the latter provided the young college with use of University classroom and laboratory facilities as a contribution to the work of this new community institution.

Another significant landmark in this 38-year-old history occurred in 1930 when New Haven College, which until then had offered simply a scattering of relatively unrelated courses, embarked upon its program of planned education for employed adults. This movement which embodied a principle still of significant importance to the institution and to the com-

munity, was stimulated by Ellis C. Maxcy, director of the College from 1930 to 1937, and now a member of the Board of Governors.

A two-year period of experimentation based on planned cooperation between business and industry, on the one hand, and the College, on the other, led to a new development in 1938. That year the companies participating in this experimental program formalized their relationship with the College by appointing 300 coordinators. The function of these coordinators was to act as counselors and liaison officers, whichever was required by the occasion, for: 1) the student-employee; 2) the individual company with which he was associated; and 3) the College. From this movement toward close cooperation among business, industry and the college, the Evening Credit Program now being offered as part of the regular curriculum was evolved. Under this program, regularly employed adults may attend classes in the evening, and can work for a college degree without losing the wages they receive from their regular daytime employment.

The Engineering, Science, and Management War Training Program was organized in 1941 under Federal sponsorship and financing as an aid to war industry. Its purpose was to develop the skilled personnel needed by industry during the war emergency. An official program of Yale University, it was administered in New Haven County by the College, and had lasting significance for two reasons. First, it revealed new areas in which the College could provide training and educational services for the local industrial community. Secondly, it resulted in another expansion of the College curriculum.

The first veteran of World War II enrolled in 1944. Except as a harbinger of the peace that was to follow, this event might have had little significance in the history of the College. Actually, it turned out to be a most significant event for New Haven College and for American higher education, since in the next five years enrollment soared because of returning veterans anxious to obtain their college degrees. Equally important, this growth in enrollment was not temporary. Even after the returning veterans had completed their education, enrollments remained high, mainly because the concept of higher education had gained currency among the American public. As it has been since 1945, the problem today is to find enough qualified teachers and adequate classroom facilities to accommodate the many people in the area who want a college education.

The development of five-year Employee Training Agreements with companies also occurred in 1944. These agreements, providing for new and improved relations with business, helped the College adapt its programs to the post-war needs of the community. The funds received allowed the College to provide new and increased leadership, improved services to cooperating companies, and new programs of study to fit the community's post-war needs.

Another important event in the history of New Haven College occurred in 1948, when the College was accredited by the New England Association of Colleges and Secondary Schools. This approval granted in recognition of the high academic standards maintained by New Haven College means that credits earned by students at the College will be accepted toward degrees at other accredited colleges and universities.

The Cooperative Program of Education, under which the student alternates four months of full-time study with a similar period of full-time work, was inaugurated at New Haven College in 1949. This work-study plan, originated by the University of Cincinnati in 1906 and since then adapted by many other institutions of higher education, was a natural outgrowth of the College's long experience of cooperation with the community's business and industry. The subsequent response to the program is testimony to the College's awareness of the needs of New Haven area students.

New Haven College undertook a unique venture in 1952, when the first class in its School of Executive Development was organized. The School of Executive Development (SED) is a four-year program for middle-level executives, and is designed to help them develop the additional breadth and understanding outside the area of their own specialization which is requisite for their promotion to the top levels of management. Operating under the guidance of a group of senior executives from New Haven business and industry, the program further exemplifies the cooperation between the College and the industrial community in meeting both present and future needs.

A program to develop engineering aides for the Olin Mathieson Chemical Corporation was started by New Haven College in 1956. In view of the expected shortage of engineering personnel, this program has a significance that in the years to come will extend far beyond the New Haven area. This type of program is adaptable to the needs of any company or group of companies in the New Haven area. A recent example of this is the newly initiated electrical engineering program designed for Pratt, Read & Company and associated companies in the Essex, Connecticut area.

The year 1957-58 proved to be the most significant in the history of New Haven College. During this year the College announced its plans for the new Daytime Engineering Program to be offered for the first time starting in September, 1958. This program, open to graduates of accredited high schools, offers the first two years of a regular four-year engineering course. Students completing this two-year Daytime Engineering Program can transfer to regular four-year colleges where they may complete their engineering education or transfer to the bachelor degree programs of New Haven College. In addition, if they choose, they may obtain employment in any of the many local industries seeking engineering talent. This program helps meet the national shortage of engineers and is of great benefit to area students wishing to embark upon an engineering education while living home.

Construction was started in October, 1957, on the New Haven College building which houses the Daytime Engineering Program as well as other course offerings. This modern campus building on Cold Spring Street was occupied in September, 1958.

Finally, New Haven College received authorization in 1959 to offer programs leading to the Bachelor of Science degree in the fields of business, accounting, management, and industrial engineering. This authorization, granted only after a rigid inspection of its educational facilities, certified the growing recognition of New Haven College as one of Connecticut's leading

educational institutions. It also signified the ability of the College to grow with the mounting educational needs of the community.

The ultimate objective of New Haven College, as formulated throughout its history, is to help its students realize their vocational aims, and also to help them, through a program of general education and guidance, to achieve an increased understanding and appreciation of life. By so doing, it provides the community with the type of citizens required in a healthy democracy.

NEW HAVEN COLLEGE

General Information

New Haven College, 1959-1960

New Haven College

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Divisions of the College

New Haven College has seven divisions, each of which serves a special function. They are: The Evening Credit Program, The Daytime Cooperative Program, The Daytime Engineering Program, The Joint College-Industry Engineering Program, The Division of Special Studies, The School of Executive Development, and The Reading Center.

Detailed information about each of these divisions is available on the subsequent pages of this catalog. For purposes of ready identification, a brief description of each follows.

The Credit Programs

The Evening Credit Program is the evening degree-granting division of the College and consists of the Upper Division which confers the bachelor degree, and the Junior College which offers the associate degree programs.

The Daytime Cooperative Program, intended for recent high school graduates, alternates periods of full-time studies with periods of employment in business and industry. Students taking this program may earn the Associate in Science degree.

The Daytime Engineering Program is a co-educational, transferable program offering the first two years of a four-year engineering program. It provides an opportunity for those students interested in engineering, mathematics or science to initiate their college program while residing at home.

The Joint College-Industry Engineering Programs are programs under which qualified employees of a company or group of companies undertake a three-year course in the field of engineering. Late afternoon classes are combined with in-plant training. These programs supplement the knowledge and skills of selected employees of the participating companies with formal classroom instruction. By so doing, the industries of this region are provided with engineering aides.

The Division of Special Studies

This Division offers a series of special courses in the fields of engineering, business and general areas. Usually students taking these courses do not receive academic credits. The courses generally are designed to provide supplemental knowledge and skills needed in specialized jobs in business and industry. Further information about this Division may be obtained through the index of this catalog or by requesting separate bulletins from the College.

The School of Executive Development

This four-year program for middle-level executives consists of advanced studies in the field of management, with emphasis placed on the development of the student's breadth and understanding outside the area of his or her specialization. The School is guided by a group of senior executives of New Haven area businesses and industries, and its enrollment is limited to individuals designated by their respective companies and approved by the College. This program is offered in the late afternoon hours. Additional information about this program may be obtained by consulting the references listed in the index of this catalog or from separate bulletins which may be obtained from the College.

The Reading Center

Of great significance today is the fact that a large number of secondary and college students are seriously deficient in many aspects of reading. This deficiency is equally significant in the adult world where the demands of an increasingly complex society require a greater amount of reading.

It is then the aim of the New Haven College Reading Center to offer a varied program of reading techniques and study skills to fit the specific needs of students and adults. The program is designed, for the present, for classroom group teaching techniques on the secondary, college, and adult levels. In the near future, plans call for an extension of the program to include small group and individual tutoring for students of all age and accomplishment levels.

New Haven College and Yale University

The relationship of New Haven College and Yale University is defined by the following excerpt from the Yale University Catalogue:

"No extension or evening classes are offered by Yale University either in termtime or during the summer.

"Individuals interested in late afternoon or evening work are referred to New Haven College, an independent community institution chartered by the Connecticut legislature, which is operated in ten buildings contributed by Yale without charge as part of its service to the Community."

Admission

Since each division of the College has its own admission requirements, these requirements are defined in detail in subsequent pages of this catalog.

In general, graduates of accredited secondary high schools are eligible for admission. However, in special cases persons who have not completed their high school education may be admitted to the various divisions of New Haven College by meeting certain specified conditions.

In the case of adults, the College is interested in evidence of maturity as well as in formal education as pre-requisites for admission.

Accreditations and Memberships

New Haven College is a co-educational. non-sectarian, independent institution of higher learning chartered by the Legislature of the State of Connecticut, accredited by the Connecticut State Department of Education as a junior and senior college. The College holds membership in the American Association of Junior Colleges, the Association of YMCA Schools and Colleges, The Connecticut Conference of Junior Colleges, the New England Junior College Council, the American Council on Education and the Connecticut Council on Higher Education. The junior college division is a member of the New England Association of Colleges and Secondary Schools.

Transferability of Credit

In accordance with the usual practice among institutions of higher learning, transfer of credit from this College to another institution will be determined by the other institution in terms of the achievement and promise of the individual seeking transfer. The institution to which transfer is being made will also evaluate specific courses in terms of their length and content in relation to its specific requirements. New Haven College is an accredited institution and its credits will be given consideration by the major institutions of the country in terms of the conditions outlined above.

Student Personnel Services

In the interest of assisting each student to achieve his fullest development as a personality and of helping him to utilize most effectively the instruction offered, the College makes available to all students a variety of services which are his for the asking.

These services include:

Counseling and Guidance
Testing
Job Placement (see index)
Loans and Scholarships
Student Activities

Counseling and Guidance — Members of the administrative staff of the College reserve many hours for counseling with students. Students need only to request an appointment in order to seek information and help. By inquiring at the office, a student may learn who is most qualified to discuss his problem with him. Counseling and guidance is offered in such areas as program planning; study habits and methods; personal, marital or domestic problems; vocational selection and choice; job adjustment; relationship with Veterans Administration, the military establishments and Selective Service; and others.

Testing — Counselors, upon request, will report and interpret to students the results of their entrance tests.

The Director of Student Services, as a professional vocational counselor, is prepared to undertake vocational testing and counseling with students requesting this service.

Tuition Loan Fund — Gifts to the College have made possible a revolving loan fund which is administered in accordance with the policies established by the Board of Governors.

The purpose of this fund is to assist students to meet tuition costs by means of a loan of not more than fifty percent of their tuition for any one semester. No interest charge is made for this loan. Applications for assistance should be made to the College.

In addition, loan funds are available to full-time students under the provisions of Title II, The National Defense Education Act of 1958.

Scholarships and Grants-in-Aid — A limited number of scholarships and grants-in-aid, amounting to approximately one-half of the tuition, are available each year. These are awarded by the Scholarship Committee on the basis of scholastic record, ability to profit from the program and financial need. To be eligible for a scholarship, a student is expected to have a Quality Point Ratio of 3.0 for work taken at this College. Scholastic requirements to qualify for a grant-in-aid are a Quality Point Ratio of 2.0. Application forms may be secured from the College office.

The Industrial Management Club of New Haven makes available scholarships to students attending New Haven College. These scholarships are administered by the Education Committee of the Industrial Management Club under the policies established by the Club.

The Alumni Association makes scholarship grants to undergraduates as well as to outstanding members of each graduating class.

The New Haven Chapter of the American Society of Tool Engineers provides an annual scholarship to a student in mechanical engineering.

All scholarships are administered by the Scholarship Committee of the College. Applications may be obtained at the College office.

Student Council — A student council is elected annually by the student body. The Council bears the responsibility for initiating, organizing and carrying through extra-curricular activities and of performing liaison functions between students and the College staff. The major work of the Council is performed through its Student-Faculty Relations Committee and Social Committee.

The Engineering Society — The Engineering Society of the College is chartered as a student chapter of the American Association of Engineers which has as its aims "to promote the social and economic welfare of engineers, to stimulate public service in the profession, to encourage and develop the efficiency of the engineer, and to promote unity in the profession."

The activities of the society include lectures, discussions and field trips designed to stimulate interest in the field of engineering and to supplement formal study.

Full membership is open to undergraduates who have completed second-year engineering mathematics, and to engineering graduates. Students who are fully matriculated as freshmen in engineering may hold associate membership.

Athletic Activities — Intramural competition is organized and is sponsored by the College in basketball, bowling, golf, and tennis.

Intercollegiate athletics are carried out in soccer and basketball under the tutelage of professional coaches. The basketball team also participates in one of the leagues of the New Haven Y. M. C. A.

Y.M.C.A. Privileges — Each male student enrolled in the credit programs of the College is granted free use of the facilities of the New Haven Y.M.C.A. during his period of enrollment. He may participate in group sports conducted there under the supervision of a member of the College staff, or he may individually use the privileges at times convenient to him.

Each student who wishes to use the Y.M.C.A. must obtain an identification card at the College office each semester and present it at the Y.M.C.A. After satisfying the physical examination requirements he may continue to take advantage of his privileges during each period of enrollment in the College.

Student Newspaper — *The News* is the newspaper edited and published by the student group. Any student may volunteer his services on the newspaper staff.

Social Activities — The *Orientation Assembly* at the opening of each semester provides an occasion for the induction of new students into the life of the College. Addresses by members of the College staff are followed by a program of entertainment.

Guest Nights — Students and faculty invite wives, husbands or friends to attend classes with them at the College and entertain them informally following class visits.

Dances — Three or four dances, informal and semi-formal, are held annually for the entire student body.

Other Social Activities include those sponsored by the various student organizations among which are the senior banquet; meetings of the Student Council with the Board of Governors and the Academic Committee; the professional societies; the social activities of the daytime programs; and the Alumni reception for members of the graduating class following commencement.

Veterans

New Haven College is approved by the Veterans Administration for the education of veterans under Public Law 550 (Korean G.I. Bill).

In view of the fact that the full evening program of the College is approximately a half-time program, veterans attending evening classes have approximately twice the time for education for which they are eligible in a full-time program. Those enrolled in a full-time program naturally will be using their eligibility at the full rate.

Change of Program — Veterans Administration regulations do not permit the College to authorize a change of program for a veteran. Changes must be authorized by the Veterans Administration.

Counseling — Although the Registrar is the official designated to handle veterans' problems, other members of the administrative staff are available and prepared to discuss problems with veterans. Appointments may be made at the office of the College.

Library

The main library, centrally located in two well-equipped rooms at 51 Prospect Street, contains approximately 4000 volumes in an open shelf arrangement, with facilities for study and browsing. This collection, while strongest in the specific major areas of study in the college curriculum, covers all fields. An intensive program of broadening and strengthening the library is in progress.

Subscriptions to approximately one hundred periodicals are maintained, including many technical journals which correlate with the curriculum.

A branch library at 100 Cold Spring Street serves the students having courses at College Woods. Two rooms on the main floor contain a small but rapidly growing collection of books, periodicals and pamphlets, and are equipped for use as study and reading rooms.

The full resources of the New Haven Public Library (315,000 volumes) are available to all New Haven College students, regardless of place of residence.

Alumni Association

Eligibility for membership in the Alumni Association is acquired immediately upon graduation from either the associate or bachelor programs. One of the staff officers of the College serves as Alumni Secretary. An Executive Committee conducts the affairs of the association during the periods between annual meetings and also serves as a planning group. There is a standing committee on annual giving.

In addition to the annual meeting, other meetings of social and educational interest occur during the year.

The Alumni Association is represented on the Board of Governors by the election of a member to the Board for a term of two years. The president of the Association serves on the Board of Governors as an ex-officio member.

The Association awards scholarships to qualified students and prizes to outstanding members of the graduating class.

Scholastic Regulations

Grading System — The following grading system is in use, and except where otherwise specified, applies both to examinations and to term work. The weight of a final examination grade is a matter individually determined by each instructor.

A Superior
B Good
C Fair
D Lowest passing grade
F Failure

Inc. Incomplete. Indicates that some work remains to be completed. Such work must be made up promptly in order to remove the "incomplete." Otherwise, the "Inc." remains on the student's record, no credit is given for the course and it must be repeated before further work for which it is prerequisite may be taken.

WD Withdrawal. Indicates either: (1) Withdrawal prior to midpoint of semester, or (2) withdrawal after midpoint of semester and work satisfactory at that time.

WF Indicates withdrawal after midpoint of semester with unsatisfactory work.

S Satisfactory. Given only in non-credit required Daytime Engineering and Coop courses.

U Unsatisfactory. Given only in non-credit required Daytime Engineering and Coop courses.

Grade Reports — Reports of the final grade in each subject will be mailed to the student soon after the close of each semester. The same report will be mailed to employers in those instances where the student has given his approval.

Placement on Academic Probation — The academic standing of each student will be determined on the basis of his quality point ratio each semester.

The quality point ratios required to be in good academic standing are as follows:

During the first and second semester of enrollment in the College, a quality point ratio of 1.5 is required.

After the student is enrolled in the third semester, a quality point ratio of 1.6 is required.

Failure to earn the required quality point ratio in any semester will place a student on academic probation for the following semester of enrollment.

Attention is called to the fact that the minimum quality point ratio of 1.6 which is required to remain in good academic standing from semester to semester is insufficient to meet the graduation requirement of a total quality point ratio of 2.0. Therefore, the fact that a student may never have been on probation is no guarantee that he will meet graduation requirements.

In order to determine quality point ratios, each letter grade is assigned a quality point value:

A	4 quality points
B	3 quality points
C	2 quality points
D	1 quality point
F	0 quality points
WF	0 quality points

The quality point ratio for all credit students is obtained by multiplying the quality point value of each grade by the number of semester hours of the course, then dividing the total quality points by the total semester hours.

Removal of Probation or Dismissal for Academic Deficiency—

1. A student who has been placed on probation and who does not earn the required quality point ratio in the next semester will be dismissed from the division of the College in which he is enrolled.

2. A student who has twice been on probation will be dismissed from the division of the College in which he is enrolled the next time his quality point ratio for any semester falls below the required minimum.

3. A student whose quality point ratio in any one semester is less than 1.0 will be dismissed from the College.

Readmission — Applications for readmission to this College after a student has been dismissed, and application for admission to this College following dismissal from another college, will be considered only after the lapse of a semester and only when the student provides evidence which indicates his probable success if readmitted.

Requests for readmission should be submitted in writing to the Dean at least three weeks before the opening of the semester and should include evidence supporting the student's belief that he may succeed if readmitted.

Readmission does not automatically follow; each application is decided individually by the Committee on Academic Standing.

Dean's List — Full-time students who earn a quality point ratio of 3.2, or better, in any one semester will be placed on the Dean's List.

Part-time students carrying 9 or more semester hours and who earn a quality point ratio of 3.2, or better, in any one semester will be placed on the Dean's List.

Attendance Regulations

Evening Credit Program — A student is automatically dropped when his absences exceed three per semester for a 3-semester-hour course, and proportionally increased for courses carrying additional semester hours.

Daytime Credit Programs — Classes are operated on the policy that it is necessary for all students to attend all class meetings. If a class is missed, the benefits from participation in the class discussion and instruction are completely lost. No student, regardless of ability, can afford that loss. "Free cuts" do not exist at New Haven College.

In the event of illness or emergency the student must notify his instructor. Excessive absences will be reported to the Dean for dismissal action.

Requirements for the Degree

The Associate and Bachelor degrees will be conferred at Commencement when the student has met *all* the requirments of his program and:

1. Has earned a cumulative quality point ratio of at least 2.0;
2. Has been recommended by the faculty;
3. Has met all financial obligations.

Degree With Honors —

A degree with honors is awarded to students who have a quality point ratio of 3.33 for the semester hours specifically required for the degree program from which they are being graduated, and who have taken all the required work at this College.

Transfer students will be awarded honors on the same basis, provided however, that their total average will be considered only when they have an honor average for studies completed at this College.

Degree With High Honors —

A degree with high honors is awarded to students who have a quality point ratio of 3.6 based on the same considerations as noted above.

In determining eligibility for degrees with honors, credits earned by crediting examinations and electives in excess of those required will not be considered.

Transfer Students —

Students who have been granted advanced standing for credits earned at another college are required to earn at New Haven College a minimum of eighteen semester hours for the Associate in Science degree, and a minimum of thirty semester hours for the Bachelor of Science degree.

NEW HAVEN COLLEGE

Evening Credit Programs

OFFERING THE DEGREE
ASSOCIATE IN SCIENCE

in

General Studies
Business Administration
Accounting
Management
General Engineering
Electrical Engineering
Industrial Engineering
Mechanical Engineering
Metallurgical Engineering

OFFERING THE DEGREE
BACHELOR OF SCIENCE

in

Business Administration
Accounting
Industrial Management
Industrial Engineering
—*General*
—*Electrical Option*

New Haven College, 1959-1960

Calendar
The Evening Credit Programs

Summer Session 1959

Placement Examinations:		
English examinations	Monday, 7:00 p.m.	June 8
Psychological examination	Tuesday, 7:00 p.m.	June 9
Mathematics examination	Tuesday, 8:15 p.m.	June 9
Registration period	Tuesday, Wednesday	June 16, 17
Tuition due on or before	Wednesday	June 17
Classes begin	Monday, 7:00 p.m.	June 22
Final examinations end	Wednesday	September 2

Fall Semester 1959

Registration for current and former students	Monday-Saturday, 12 Noon	August 24-September 5
Placement Examinations:		
English examinations	Thursday, 7:00 p.m.	August 27
Psychological examination	Friday, 7:00 p.m.	August 28
Mathematics examination	Friday, 8:15 p.m.	August 28
Psychological examination	Thursday, 7:00 p.m.	September 3
Mathematics examination	Thursday, 8:15 p.m.	September 3
Labor Day (holiday)	Monday	September 7
Registration for new students	Wednesday-Saturday, 12 Noon	September 9-12
Tuition due on or before	Saturday, 12 Noon	September 12
Assembly for new students	Monday, 7:30 p.m.	September 14
Classes begin	Thursday, 7:00 p.m.	September 17
Last date for admission of former students and transfers	Wednesday	October 7
Thanksgiving (holiday)	Thursday, Friday	November 26, 27
Christmas recess	Thursday-Sunday	December 24-January 3
Classes resume	Monday, 7:00 p.m.	January 4
Final examinations begin	Wednesday	January 13
Final examinations end	Tuesday	January 19
Recess	Wednesday-Sunday	January 20-31

Spring Semester 1960

Registration for current and former students	Monday-Saturday, 12 Noon	January 4-16
Placement Examinations:		
English examinations	Monday, 7:00 p.m.	January 11
Psychological examination	Tuesday, 7:00 p.m.	January 12
Mathematics examination	Tuesday, 8:15 p.m.	January 12
Registration for new students	Wednesday-Saturday 12 Noon	January 20-23
Tuition due on or before	Saturday, 12 Noon	January 23
Classes begin	Monday, 7:00 p.m.	February 1
Last date for admission of former students and transfers	Friday	February 19
Washington's Birthday (holiday)	Monday	February 22
Good Friday (holiday)	Friday	April 15
Final examinations begin	Tuesday	May 24
Memorial Day (holiday)	Monday	May 30
Final examinations end	Tuesday	May 31
Commencement	Sunday	June 12

Summer Session 1960

Placement Examinations:		
English examinations	Monday, 7:00 p.m.	June 6
Psychological examination	Tuesday, 7:00 p.m.	June 7
Mathematics examination	Tuesday, 8:15 p.m.	June 7
Registration period	Tuesday, Wednesday	June 14, 15
Tuition due on or before	Wednesday	June 15
Classes begin	Monday, 7:00 p.m.	June 20
Independence Day (holiday)	Monday	July 4
First Term final examinations	Monday	July 25
Second Term classes begin	Wednesday	July 27
Second Term final examinations	Monday	August 29

Evening Credit Program

Staff Member in Charge: ALLEN C. HUTCHINSON

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Aims and Objectives

Recognizing that education, in the broadest sense of the word, is a process confined not alone to the classroom, this program of instruction provided by the College takes notice of a student's job as well as his instructional experiences.

The College believes that work is good educational experience, but that when work experience is related to academic instruction it is better. Therefore, it contends that a student's work experiences and academic experiences should be integrated as much as is possible and feasible. It sees this integration as a means whereby the traditional barrier between the academic and the practical may be broken down.

In accordance with this point of view, the College encourages and assists its students either to seek employment which is related to their programs of study, or to pursue programs of study which are related to their present or contemplated work. This the College does because it regards the student's job as a laboratory where he may apply the knowledge he gains at the College, or from which he receives practical incentives for study in the classroom. As is to be expected, the degree of relationship between work and study will vary among companies depending on the variety of experience possible in a given company and the degree of cooperation developed between the College and the company in planning for these relationships.

It is important that students pursue a related work program after the first year of study. It has been found that, although not essential to the more elementary work of the first year, work experience is essential thereafter if the student is to progress with the general level of his classes. Dependence is placed on work experience for acquiring technical terminology, skill, and familiarity with illustrations which will be used in classes. While the degree of essential relationship between work and study may be slight even in the second year, the need progressively increases in the advanced stages of the program. The most elementary office jobs for a business student, or comparable plant jobs for an engineering student, are considered sufficiently related for the earlier part of the program.

The placement activity of the College, described elsewhere in this bulletin, is designed primarily to implement the idea of an integrated program of related work and study.

Admission of Students

With the exception of "auditors", students wishing to take any course in the Evening Credit Program, whether or not they seek a degree, must satisfy the admission requirements.

Admission of Students from Secondary Schools

Requirements — The following regulations apply to the admission of students from secondary schools.

The applicant should be a graduate of an approved secondary school or should possess a state high school diploma.* In some cases, an adult who has completed at least two years of secondary school with satisfactory record may be considered, provided he performs exceptionally well on the placement examinations which are required. The admission of such an adult will be tentative for one year, during which time he must pass the state examinations for the state high school diploma.* No person will be considered who has not completed at least two years of secondary school. The quality of the secondary school record, especially of the academic subjects it contains, is given greater consideration than is the specific pattern of courses taken in secondary school.

Applicants from secondary schools are required to take certain placement examinations as follows:

The Psychological Examination, which is a measure of scholastic ability, is required of *all.* In conjunction with the secondary school record it determines the acceptability of the student.

The Mechanics of English Examination, which is a test of English usage, spelling, punctuation and capitalization, is required of *all.* Applicants otherwise admitted who do not perform satisfactorily on this test will be required to enroll in E A, Basic Grammar, before enrolling in E 113, English Composition.

The Reading Comprehension Examination, which is a test of reading speed and comprehension, is required of *all.* Since reading deficiency is a serious handicap, applicants otherwise admitted who do not perform satisfactorily on this test will be required to schedule E B Reading Laboratory early in their program.

The Mathematics Examination, which covers plane geometry and two years of high school algebra, is required of all *engineering* or *mathematics students* who wish to begin their mathematics study at any level above M A-B, Basic Mathematics I. Performance in this examination will determine whether the applicant, otherwise admitted, will be placed in M A-B, in M C-D, in M 113, or in M 114. Electing not to take the examination automatically places the student in M A-B, Basic Math I.

Admission of Students Transferring from Other Colleges

Requirements — Transfer students who present evidence of completion of at least thirty semester hours of study at an accredited college with an overall average of "C" or better may be admitted on the basis of an official transcript and will not be required to take the Psychological Examination.

For the purpose of determining placement, the following examinations are required as indicated below:

* Information regarding the examinations for the state high school diploma may be obtained from the Director of Student Services, or by writing to the Bureau of Youth Services, State Department of Education, State Office Building, Hartford, Connecticut.

The *Mechanics of English Examination* and the *Reading Comprehension Examination* are required unless the transcript shows the completion of at least three semester hours of college English with a grade of "C" or better.

The *Mathematics Examination* is required if the student wishes to undertake engineering or mathematics, unless his transcript shows the completion of at least three semester hours of college mathematics with "C" or better grades.

Placement in courses as a result of the above examinations will be on the same basis as for applicants from secondary schools.

Transfer students who *do not have* the required thirty semester hours of work as noted above, or who have been dismissed for academic deficiency, are required to take the Psychological Examination in addition to the other placement examinations which are applicable, as described above.

Transfer students who are not certain of the quality of their previous work are advised to take all entrance examinations lest their transcript be delayed and of an unacceptable quality.

Advanced Standing — Credit for work applicable to the program undertaken at New Haven College will be granted tentatively upon receipt of official transcript from the previous college, and the student will be notified of the credit granted. It will be officially granted only upon the successful completion of a year's work at New Haven College.

Transfer students who wish to fulfill the requirements of the A.S. degree at New Haven College must complete a minimum of eighteen semester hours at this College, twelve of which must be in their field of specialization.

Transfer students for the B.S. degree must complete a minimum of thirty semester hours at this College.

Admission to Advanced Courses Without Presenting Formal Prerequisites

Students who have been admitted to the College according to the requirements for admission and who wish to undertake a course for which they lack the formal prerequisites as listed in the course description may attempt to demonstrate their qualifications for taking the advanced course by Crediting Examination.

Crediting Examination — The Crediting Examination provides means whereby credit may be established for a course by examination. It is the policy of the College that no student shall be required to take courses which he does not need because of previous experience or education. Since his previous experience or education may have been with a non-accredited institution or agency, or with the armed forces, it is difficult to determine the amount of credit which he should receive toward a New Haven College degree. Therefore, a student may meet course prerequisites and/or establish credit in specific courses by passing successfully a Crediting Examination in each of the courses in which he feels qualified.

Students desiring to undertake a Crediting Examination should first discuss the matter with the Dean. If it is agreed that the examination is feasible, an application accompanied by a fee of fifteen dollars should be submitted. The examination is then arranged.

A Crediting Examination normally will consist of a three- to four-hour written and a one-hour oral examination.

At least one year's successful study must be completed at the College before credit awarded by examination will be granted officially.

Application and Admission Procedures

Those interested in seeking admission should phone or write the College and arrange for a personal interview with a staff member. At the time of the interview the applicant will complete a Personal Data Form and will plan his program. Interviews may be scheduled during office hours at the convenience of the applicant.

During the registration period and after the conclusion of the interview, the student who has decided to seek admission completes registration forms indicating the courses he wants, pays the application fee and, depending upon the date of registration, also pays the tuition charges. Only the tuition is refundable and then only in the event that the College does not accept the applicant.

Following application, the College requests the secondary school record of the applicant. Applicants who wish to present college transcripts, either for admission purposes or for advanced standing, must themselves request their college transcript to be sent to the College. The College provides a form on which the applicant may make this request.

The applicant next takes such placement examinations as are required of him and is notified in writing of his acceptance or rejection, and of the subjects he will be required to take as a result of his performance on the placement examinations.

Class admission cards and book lists will be mailed to the registrant immediately preceding the opening of classes.

Classification of Students

There are three classifications of students in the Evening Credit Program: Degree Student, Non-Degree Student, and Auditor.

Degree Student — The degree student indicates on his registration that he is undertaking to complete the requirements for the A.S. Degree or B.S. Degree in one of the Evening Credit Programs. He must satisfy all the admission requirements and be a fully matriculated student.

Non-Degree Student — The non-degree student is one who does not intend to meet all the requirements for a degree, but who wishes to select certain subjects which are offered as a part of the degree requirements. Although not seeking a degree, the non-degree student must satisfy all admission requirements in the same way as the degree student, thus making it possible for him to become a degree candidate at any registra-

tion simply by so indicating on his registration. Although the student is not a candidate for a degree, he must be fully matriculated.

Auditor — The classification of auditor is assigned to persons who wish merely to attend class and listen to the discussion. Since they are not required to meet any of the admission requirements, they are not privileged to participate in discussion, nor to have tests and examinations graded by the instructor; they are not subject to attendance regulations, and are not granted any credit. In fact, no record of auditors will be kept.

Registration

Degree and Non-Degree Students — There are two parts to registration: the completion of the registration forms and the payment of tuition. Both should be completed before the closing date of registration as stated in the calendar. There is a penalty fee for delaying either of these two processes beyond the closing date of registration.

Registration is possible within office hours during the registration dates stated in the calendar.

Registering must be in person at the College office. Forms are not mailed to students.

A separate registration is required for each of the semesters and for the summer session.

New students must be interviewed before they register.

Changes of Registration and Schedules

Students are urged to plan their program carefully before completing the registration forms in order to avoid the need for requesting changes. Once the registration has been completed, the student is charged the Change of Registration Fee for each request for change which he makes. The fee is charged whether or not the request is granted, and is payable when the student completes the form requesting the change. There is no Registration Change Fee charged, however, for a request to add a course.

Schedule of Hours and Subject Load

All courses, except four-semester-hour laboratory courses, offered in the Evening Credit Program are scheduled to meet from 7:00 P.M. to 9:45 P.M. The College is operated Monday through Friday. Subjects valued at three semester hours of credit per semester meet one evening per week; those valued at six semester hours per semester meet two evenings per week.

A student may carry as little as three semester hours or as many as ten, depending on his wishes. The same academic standards are required of the student regardless of the number of credits he carries.

Placement Service for Evening Credit Students

The College receives requests from both students and employers for job placement services. Although the College does not conceive its function to be that of a public employment service, it is interested in and prepared

to render placement service within the limitations of its purposes and resources. It acts as a medium of exchange of information between students and former students who desire placement, and employers seeking personnel. It is particularly interested in helping students find positions which require college study or which lead to positions that require such education, and in assisting students to find employment related to their program of studies.

A student or former student of the College who desires placement should call at the office for a placement application form and at that time will receive specific information as to whom he is to contact in regard to his placement problem.

A company wishing to use the placement facilities of the College should list the job and the desired qualifications in the form of a letter. A member of the College staff will then contact the company to discuss procedure and possibilities of filling the position.

Tuition Charges, Payments, and Refunds

EVENING CREDIT PROGRAM

Tuition Charges — Tuition charges are based on a rate of seventeen dollars ($17.00) per semester hour or equivalent time for all courses offered in the Evening Credit Program. The charges are:

One course (three semester hours) or equivalent	$ 51.00
One course (four semester hours) or equivalent	68.00
Two courses (six semester hours) or equivalent	102.00
Three courses (nine semester hours) or equivalent	153.00
Reading Laboratory	60.00

Payments — IT IS EMPHASIZED THAT NO STUDENT IS REGISTERED UNTIL HE HAS MET THE REQUIREMENTS OF THE PAYMENT SCHEDULE IN ADDITION TO THE REGULATIONS DESCRIBED ON PAGES 28 TO 31.

All students are encouraged to make tuition payments in full in accordance with cash plan schedule below. However, provision is made for those who wish to defer their payments, the procedure for which follows:

1. An initial payment in cash consisting of:
   a. Partial payment of tuition.
   b. Full payment of student activity fee.
   c. Payment of a service charge of five dollars ($5.00) for the processing and servicing of a promissory note (see 2 below).
2. The making of a promissory note (signature of parent or guardian required of minors) for the balance of the total tuition charges.

Schedule of Payments

	CASH PLAN	DEFERRED PLAN		
	Full Payment By closing Date of Registration	*Initial Payment By closing Date of Registration*	*Second Payment*	*Third Payment*
Fall Semester			*Nov. 1*	*Dec. 1*
One course (3sh)	$ 52.00	No provision for deferment		
One course (4sh)	69.00	No provision for deferment		
Two courses (6sh)	104.00	$59.00	$25.00	$25.00
Three courses (9sh)	156.00	71.00	45.00	45.00
Spring Semester			*Mar. 1*	*Apr. 1*
One course (3sh)	$ 52.00	No provision for deferment		
One course (4sh)	69.00	No provision for deferment		
Two courses (6sh)	104.00	$59.00	$25.00	$25.00
Three courses (9sh)	156.00	71.00	45.00	45.00
Summer Session			*July 15*	*Aug. 15*
One course (3sh)	$ 52.00	No provision for deferment		
Two courses (6sh)	104.00	$59.00	$25.00	$25.00

NOTE: The above schedule includes Student Activity Fee.

Refunds — Tuition is refunded or cancelled by one of two methods:

1. On a percentage basis prior to the fifth meeting of any class and for any reason.
2. On a pro-rata basis of three dollars and fifty cents ($3.50) per class session at any time during a semester for specific reasons having to do with illness, job changes, and draft into the armed services.

Refer to the information which follows for details of operation of the two methods.

Refunds on a Percentage Basis for Withdrawals— Regardless of Reasons

Refunds or cancellations are made on a per course basis, the *effective date* being the date the student notifies the College of his withdrawal.

If the effective date of withdrawal occurs—

1. Anytime prior to the first meeting of class, the amount refunded or cancelled is 80%.
2. Anytime after the first and prior to the second meeting of class, the amount refunded or cancelled is 60%.
3. Anytime after the second and prior to the third meeting of class, the amount refunded or cancelled is 40%.
4. Anytime after the third and prior to the fourth meeting of class, the amount refunded or cancelled is 20%.
5. After the fourth meeting of class there is no refund or cancellation.

Refunds will be made only when the amount of tuition actually paid exceeds the amount for which the student is responsible in accordance with the above schedule. If the amount paid is less than the amount the student is responsible for, then the unpaid amount must be paid on the date of the withdrawal notice, the promissory note being cancelled.

IMPORTANT: The student must initiate this entire procedure by informing the College *in writing* of his intention to withdraw.

Refunds on a Pro-rata Basis for Withdrawal for Specific Reasons

Refunds or cancellations are made on the basis of three dollars and fifty cents ($3.50) per class session. The student is charged at this rate for all sessions which have occurred prior to the date of the withdrawal notice and is refunded at the same rate for all sessions scheduled after the withdrawal notice. Refunds are made only when the amount of tuition actually paid exceeds the charge. If the amount paid is less than the amount for which the student is responsible, then the balance owed by the student is immediately payable, the promissory note being cancelled.

Refunds will be made at any time during any semester, but only for the following reasons:

1. Protracted illness of the *student* evidenced by a letter or certificate from the attending physician.
2. Induction (not enlistment) into the armed services, evidenced by a photostatic copy of the draft notice.
3. Job changes *initiated by the employer* involving:
   a. A change to a shift which precludes meeting the College's schedule of classes or
   b. A change to a location which is beyond the normal commuting distance from the College, both of which must be evidenced by a letter written on company stationery and signed by an officer of the employing company.

IMPORTANT: The student must initiate this entire procedure by informing the College *in writing* of his intention to withdraw. After the withdrawal notice and upon receipt by the College of the evidence referred to above, the refund will be made.

Fees — Evening Credit Program

APPLICATION FEE $5.00
Payable only once at the initial time of application. NOT REFUNDABLE.

TUITION — See pages 32 to 33.

STUDENT ACTIVITY FEE $1.00
Charged at the rate of $1.00 per three semester hour course per semester. NOT REFUNDABLE.

PROMISSORY NOTE SERVICE CHARGE $5.00
Payable at the time each promissory note is made. NOT REFUNDABLE.

LATE FEE $2.00
Assessed for failure to submit registration forms *or* to make the initial required tuition payments by the closing date of registration each semester. NOT REFUNDABLE.

CHANGE OF REGISTRATION FEE $2.00
This fee is assessed following submission of registration cards in all cases involving:
Dropping a course or courses
Substituting courses
Requesting assignment to a different section of the same course where no preference has previously been stated. NOT REFUNDABLE.

MAKE-UP EXAMINATION FEE $5.00
Assessed when a student requires an end-of-semester examination at other than the scheduled time except for conflicts caused by the examination schedule. NOT REFUNDABLE.

CREDITING EXAMINATION FEE $15.00
Assessed for each examination requested by a student for the purpose of establishing credit in lieu of taking a course. NOT REFUNDABLE.

GRADUATION FEE $15.00
Payable one month prior to graduation. NOT REFUNDABLE.

LABORATORY AND BREAKAGE FEE $12.50
Payable each semester by students registering for courses requiring the laboratory fee—See Course Descriptions.

The Summer Session of the Evening Credit Program

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The College offers a summer session with these primary functions:

1. To offer opportunity for summer study to those residents of the New Haven area who attend other schools during the regular school year. For financial reasons, most of these students find it desirable to live at home and work during the summer. The summer program of the College is confined to evening classes; therefore, it is possible to work during the day and attend classes in the evening. Reasons for summer study vary, but are generally confined to the following:
   a. To make up deficiencies.
   b. To satisfy prerequisites for courses in the parent institution.
   c. To acquire advanced standing in the parent school.

   Experience has shown that the credits earned at the College are acceptable to parent institutions. The College is a member of the New England Association of Colleges and Secondary Schools. For additional assurance of the acceptance of credit by the parent school, prior approval by that school is advisable.
2. To provide opportunity for summer study to the students of the College. Reasons for summer study for this group of students may be described as follows:
   a. To lighten the study load during the regular school year, but still meet the yearly requirements of the four year program.
   b. To shorten the normal time required for a degree.
   c. To take preparatory work.
   d. To make up deficiencies caused by failure in certain courses.
   e. To take additional work beyond the degree requirements and yet complete a program within the normal time of four years.

NOTE: The accomplishment of any one of the five objectives listed above will depend on the specific subjects offered during any summer session.

Registration — For all new students a personal interview with a staff member of the College is necessary. Registration procedures will be explained at this time. For those new students who desire work for credit in other institutions, prior approval should be obtained from those institutions (see 1 above). This procedure should be followed each semester regardless of previous attendance.

Evening Credit Program

PROGRAMS OF STUDY

Associate in Science Programs

Bachelor of Science Programs

New Haven College, 1959-1960

Associate in Science Programs

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PROGRAM OF GENERAL STUDIES

It is recognized that there are certain groups of students who desire a general education. These students may be categorized as follows:

Those who wish a college degree in the field of general studies, but who do not desire to spend four years in a senior college.

Those who have not yet decided which technical field they want to specialize in, but who, in the meantime, desire an education of a general nature.

Those who want a general education and degree at junior college level for later transfer to a senior college for a bachelor's degree.

Those college graduates of technical programs who now find that their need lies in the field of general studies and the corresponding acquisition of educational breadth.

The College is meeting the needs of these students by offering the program outlined below. The degree Associate in Science in General Studies is awarded upon the successful completion of the requirements. A total of 60 semester hours of study is required.

The total hours required are distributed as follows:

I. Required Courses, totaling		36 sem. hrs.
*E 113	English Composition	3 s.h.
E 114	Speech	3 s.h.
E 118	Modern Literature (Spring Only)	3 s.h.
E 201-202	Humanities	6 s.h.
EC 133	Economics	3 s.h.
P 111	Psychology	3 s.h.
PHIL 111	Philosophy	
or		3 s.h.
PHIL 113	History of Philosophy	
SC 111-112	Modern Science	6 s.h.
SS 113-114	Sociology	6 s.h.
or		
SS 121-122	Political Science	6 s.h.
II. Elective Courses, totaling		24 sem. hrs.

To be selected from any credit offerings of the College for which the student satisfies prerequisites. See course descriptions.

TOTAL HOURS REQUIRED FOR THE ASSOCIATE IN SCIENCE DEGREE ..... 60 sem. hrs.

* Entrance into this course is permitted upon satisfactory performance on the placement examination.

For other courses available as substitutes or electives at Quinnipiac College, consult the Dean.

BUSINESS ADMINISTRATION

(Associate in Science)

In order to acquire the Associate in Science in Business Administration, all students are required to take a basic program which includes accounting, law, economics, general studies, and business. The successful completion of these courses earns the student the sixty-three semester hours of credit required for the degree.

This program represents the first half of the Bachelor of Science program in Business Administration. See Page 48.

Required Courses, totaling ..... 63 sem hrs.

FIRST YEAR

Fall			*Spring*		
A 111	Introductory Accounting	3 s.h.	A 112	Introductory Accounting	3 s.h.
BA 101	Law of Contracts & Bus. Associations	3 s.h.	BA 102	Law of Contracts & Bus. Associations	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

EC 133	Economics	3 s.h.	EC 202	Economic History of U.S.	3 s.h.
IE 114	Management Survey	3 s.h.	E 220	Technical Report Writing	3 s.h.
P 111	Psychology	3 s.h.	PS 225	Human Relations in Management	3 s.h.

THIRD YEAR

BA 111	Principles of Sales	3 s.h.	BA 112	Principles of Marketing	3 s.h.
BA 117	Business Mathematics	3 s.h.	BA 118	Business Mathematics	3 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.

FOURTH YEAR

PS 123	Personnel Administration	3 s.h.	PS 244	Management Labor Relations	3 s.h.
BA 131	Public Relations	3 s.h.		or	
			BA 216	Business Statistics	3 s.h.

TOTAL REQUIRED FOR DEGREE ..... 63 sem. hrs.

* Entrance into this course is permitted upon satisfactory performance on the placement examination.

ACCOUNTING

(Associate in Science)

In order to acquire the Associate in Science in Accounting, all students are required to take basic courses in accounting, law, English, and economics. The successful completion of these courses earns the student the sixty-three semester hours credit required for the degree.

This program represents approximately the first half of the Bachelor of Science program in Accounting. See page 47.

Required Courses, totaling ..... 63 sem. hrs.

FIRST YEAR

Fall			*Spring*		
A 111	Introductory Accounting	3 s.h.	A 112	Introductory Accounting	3 s.h.
BA 101	Law of Contracts & Bus. Associations	3 s.h.	BA 102	Law of Contracts & Bus. Associations	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

A 221	Intermediate Accounting	3 s.h.	A 222	Intermediate Accounting	3 s.h.
A 223	Cost Accounting	3 s.h.	A 224	Cost Accounting	3 s.h.
EC 133	Economics	3 s.h.	EC 202	Economic History of U.S.	3 s.h.

THIRD YEAR

A 331	Advanced Accounting	3 s.h.	A 332	Advanced Accounting	3 s.h.
A 333	Auditing	3 s.h.	A 334	Auditing	3 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.

FOURTH YEAR

BA 117	Business Mathematics	3 s.h.	BA 118	Business Mathematics	3 s.h.
E 220	Technical Report Writing	3 s.h.			

TOTAL REQUIRED FOR DEGREE ..... 63 sem. hrs.

* Entrance into this course is permitted upon satisfactory performance on placement examination.

MANAGEMENT

(Associate in Science)

The Program of Management is designed for persons whose administrative responsibilities may be in a staff department dealing with materials, methods, and personnel phases of business. It does not include technical engineering work.

In order to acquire the Associate in Science in Management all students must take a pattern of required courses. The successful completion of the required courses earns the student the sixty-six hours required for the degree.

This program represents the first half of the Bachelor of Science program in Industrial Management. See page 49.

Required Courses, totaling ..... 66 sem. hrs.

FIRST YEAR

Fall			*Spring*		
A 111	Introductory Accounting	3 s.h.	A 112	Introductory Accounting	3 s.h.
BA 101	Law of Contracts & Bus. Associations	3 s.h.	BA 102	Law of Contracts & Bus. Associations	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

Fall			*Spring*		
EC 133	Economics	3 s.h.	EC 202	Economic History of U.S.	3 s.h.
P 111	Psychology	3 s.h.	PS 225	Human Relations in Management	3 s.h.
IE 114	Management Survey	3 s.h.	E 220	Technical Report Writing	3 s.h.

THIRD YEAR

BA 119	Office Organization & Management	3 s.h.	BA 120	Office Organization & Management	3 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.
PS 123	Personnel Administration	3 s.h.	PS 244	Management Labor Relations	3 s.h.

FOURTH YEAR

BA 117	Business Mathematics	3 s.h.	BA 118	Business Mathematics	3 s.h.
IE 133	Cost Control	3 s.h.	IE 134	Production Control	3 s.h.

TOTAL REQUIRED FOR DEGREE ..... 66 sem. hrs.

* Entrance into this course is permitted upon satisfactory performance on placement examination.

GENERAL ENGINEERING

(Associate in Science)

The primary purpose of the General Engineering program is to meet the needs of those students who have reason not to specialize in any of the specific fields of engineering offered by the College (Electrical, Industrial, Mechanical, and Metallurgical). Their particular need may cut across any two or more of these special fields.

Since most of the technical electives and some of the non-technical ones are offered in alternate years, it is extremely important that the student consult with the department chairman or a staff advisor during the latter portion of his second year in order to outline his program for the third and fourth years.

Requirements for the degree fall into two groups and are outlined below.

I. Required Courses totaling ..... 50 sem. hrs.

FIRST YEAR

Fall			*Spring*		
*M 113	Trigonometry	3 s.h.	*M 114	Algebra & Analytic Geometry	3 s.h.
D 111	Engineering Drawing	3 s.h.	D 112	Drawing & Descriptive Geometry	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

Fall			*Spring*		
PH 211	Engr. Physics (with lab.)	4 s.h.	PH 212	Engr. Physics (with lab.)	4 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.
A 113	Industrial Accounting	3 s.h.	IE 114	Management Survey	3 s.h.

THIRD AND FOURTH YEARS

MT 119	Engineering Materials	3 s.h.	EE 222	Elem. of Electrical Engr.	3 s.h.
IE 134	Production Control	3 s.h.	E 220	Technical Report Writing	3 s.h.
Restricted Electives			Restricted Electives		

II. Restricted Electives totaling ..... 15 sem. hrs.
(Restricted electives are selected from the courses listed below)

CH 201-202	Engineering Chemistry (with lab.)	8 s.h.	
D 333-334	Elementary Machine Design	6 s.h.	(Offered in Fall of even years)
D 335-336	Elementary Tool Design	6 s.h.	(Offered in Fall of odd years)
EC 113	Economics	3 s.h.	
EC 204	Engineering Economics	3 s.h.	
EE 233	Basic Electronics	3 s.h.	
EE 236	Industrial Electronics	3 s.h.	
EM 124	Mechanical Processes	3 s.h.	
EM 234	Strength of Materials	3 s.h.	
IE 119-120	Industrial Safety, Elementary	6 s.h.	
IE 133	Cost Control	3 s.h.	
M 221-222	Diff. and Integral Calculus	6 s.h.	
EM 221	Mechanics—Statics	3 s.h.	
MT 220	Metallography	3 s.h.	

TOTAL REQUIRED FOR DEGREE ..... 65 sem. hrs.

* Entrance into these courses is permitted upon satisfactory performance on placement examinations.

ELECTRICAL ENGINEERING

(Associate in Science)

The Electrical Engineering program is designed so that the first three and one-half years consist of a sequence of courses required of all students. This sequence may be described as basic for electrical engineering. The successful completion of this sequence establishes the student as a candidate for the Associate in Science in Electrical Engineering. In order to complete the degree requirements, the student must acquire at least fifteen semester hours of credit beyond the basic sequence requirements of fifty-six semester hours making a total of seventy-one semester hours of credit.

During the latter part of his second year, the student should consult the department chairman or a staff advisor to outline the sequence of courses for the remaining portion of his degree requirements. Since some electives are offered on an alternate year basis, proper planning is essential.

I. Required Courses totaling ..... 56 sem. hrs.

FIRST YEAR

Fall			*Spring*		
*M 113	Trigonometry	3 s.h.	*M 114	Algebra & Analytic Geometry	3 s.h.
D 111	Engineering Drawing	3 s.h.	D 112	Drawing & Descriptive Geometry	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

M 221	Diff. & Integral Calculus	3 s.h.	M 222	Diff. & Integral Calculus	3 s.h.
PH 211	Engineering Physics (with lab)	4 s.h.	PH 212	Engineering Physics (with lab)	4 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.

THIRD YEAR

M 323	Adv. Math. for Engr. I	3 s.h.	EE 224	Prin. of Electrical Engr.	3 s.h.
EE 223	Prin. of Electrical Engr.	3 s.h.	E 220	Technical Report Writing	3 s.h.
Restricted	Elective	3 s.h.	Restricted	Elective	3 s.h.

FOURTH YEAR

EE 331	Alternating Current Circuits	3 s.h.	EE 332	Alternating Current Circuits	3 s.h.
Restricted Electives			Restricted Electives		

II. Restricted Electives totaling ..... 15 sem. hrs.

The restricted electives are to be selected from the following courses:

EE 233	Basic Electronics	3 s.h.	EE 236	Industrial Electronics	3 s.h.
EE 235	Direct Current Machines	3 s.h.	EE 242	A. C. Machines	3 s.h.
EE 347-348	Electronic Engineering	6 s.h.	CH 201-202	Engineering Chemistry (with lab.)	8 s.h.
EM 221	Mechanics—Statics	3 s.h.	EM 322	Mechanics—Dynamics	3 s.h.
			M 324	Adv. Math for Engr. II	3 s.h.

TOTAL REQUIRED FOR DEGREE ..... 71 sem. hrs.

* Entrance into these courses is permitted upon satisfactory performance on the placement examinations.

INDUSTRIAL ENGINEERING

(Associate in Science)

The Industrial Engineering program combines basic mechanical engineering with study in the field of industrial engineering. The Associate in Science in Industrial Engineering is awarded upon completion of all requirements.

This program represents approximately the first half of the Bachelor of Science program in Industrial Engineering. See page 50.

I. Required Courses totaling ..... 70 sem. hrs.

FIRST YEAR

Fall			*Spring*		
*M 113	Trigonometry	3 s.h.	*M 114	Algebra & Analytic Geometry	3 s.h.
D 111	Engineering Drawing	3 s.h.	D 112	Drawing & Descriptive Geometry	3 s.h.
*E 113	English Composition	3 s.h.	IE 114	Management Survey	3 s.h.

SECOND YEAR

M 221	Diff. & Integral Calculus	3 s.h.	M 222	Diff. & Integral Calculus	3 s.h.
PH 211	Engr. Physics (with lab.)	4 s.h.	PH 212	Engr. Physics (with lab.)	4 s.h.
EC 133	Economics	3 s.h.	EC 204	Engineering Economics	3 s.h.

THIRD YEAR

MT 119	Engineering Materials	3 s.h.	EE 222	Elements of Electrical Engr.	3 s.h.
E 114	Speech	3 s.h.	E 202	Humanities	3 s.h.
E 201	Humanities	3 s.h.	EM 124	Mechanical Processes	3 s.h.

FOURTH YEAR

IE 241	Methods & Motion Study	3 s.h.	E 220	Technical Report Writing	3 s.h.
CH 201	Engr. Chemistry (with lab.)	4 s.h.	CH 202	Engr. Chemistry (with lab.)	4 s.h.

* Entrance into these courses permitted upon satisfactory performance on placement examinations.

MECHANICAL ENGINEERING

(Associate in Science)

The Mechanical Engineering program consists in the first three years of a sequence of courses totaling fifty-six semester hours required of all students. This sequence may be called basic mechanical engineering. The successful completion of this sequence establishes the student as a candidate for the Associate in Science in Mechanical Engineering. In order to complete the requirements for the degree, the student must acquire at least fifteen semester hours of credit, making a total of seventy-one hours of credit. These fifteen hours must be taken in advanced courses in engineering, listed under Restricted Electives.

During the latter part of his second year, the student should consult a staff advisor in order to plan the sequence of courses for the remaining portion of his degree requirements. Since many of the electives are offered in alternate years, proper planning is essential.

I. Required Courses totaling ..... 56 sem. hrs.

FIRST YEAR

Fall			*Spring*		
*M 113	Trigonometry	3 s.h.	*M 114	Algebra & Analytic Geometry	3 s.h.
D 111	Engineering Drawing	3 s.h.	D 112	Drawing & Descriptive Geometry	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

M 221	Diff. & Integral Calculus	3 s.h.	M 222	Diff. & Integral Calculus	3 s.h.
PH 211	Engr. Physics (with lab.)	4 s.h.	PH 212	Engr. Physics (with lab.)	4 s.h.
MT 119	Engineering Materials	3 s.h.	EM 124	Mechanical Processes	3 s.h.

THIRD AND FOURTH YEARS

EM 221	Mechanics—Statics	3 s.h.	EM 322	Mechanics—Dynamics	3 s.h.
E 220	Technical Report Writing	3 s.h.	EE 222	Elem. Electrical Engr.	3 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.

II. Restricted Electives totaling ..... 15 sem. hrs.

CH 201-202	Engineering Chemistry (with lab.)	8 s.h.	
D 333-334	Elem. Machine Design	6 s.h.	(Offered in Fall of even years)
D 335-336	Elem. Tool Design	6 s.h.	(Offered in Fall of odd years)
D 441-442	Adv. Machine Design	6 s.h.	(Offered in Fall of odd years)
D 445-446	Adv. Tool Design	6 s.h.	(Offered in Fall of even years)
EM 333	Mechanisms	3 s.h.	(Fall)
EM 234	Strength of Materials	3 s.h.	(Spring)
MT 220	Metallography	3 s.h.	(Spring)
PH 331-332	Thermodynamics & Heat Power	6 s.h.	

TOTAL REQUIRED FOR DEGREE ..... 71 sem. hrs.

* Entrance into these courses permitted upon satisfactory performance on placement examinations.

METALLURGICAL ENGINEERING

(Associate in Science)

The Metallurgical Engineering Program is designed so that the first three years contain a sequence of courses required of all students. Successful completion of this sequence of fifty-eight semester hours establishes the student as a candidate for the Associate in Science in Metallurgical Engineering. In order to complete the degree requirements, the student must acquire twelve additional semester hours credit to be elected from restricted electives.

Since the first opportunity for elective courses occurs in the fourth year, the student must consult a staff advisor during the latter portion of his third year so that the course sequence may be arranged. Since some of the electives are offered in alternate years, proper planning is essential.

Requirements for the degree fall into two groups and are outlined below:

I. Required courses totaling ..... 58 sem. hrs.

FIRST YEAR

Fall			*Spring*		
*M 113	Trigonometry	3 s.h.	*M 114	Algebra & Analytic Geometry	3 s.h.
D 111	Engineering Drawing	3 s.h.	D 112	Drawing & Descriptive Geometry	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

M 221	Diff. & Integral Calculus	3 s.h.	M 222	Diff. & Integral Calculus	3 s.h.
PH 211	Engr. Physics (with lab.)	4 s.h.	PH 212	Engr. Physics (with lab.)	4 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.

THIRD YEAR

CH 201	Engr. Chemistry (with lab.)	4 s.h.	CH 202	Engr. Chemistry (with lab.)	4 s.h.
EM 221	Mechanics—Statics	3 s.h.	MT 220	Metallography	3 s.h.
MT 119	Engineering Materials	3 s.h.	E 220	Technical Report Writing	3 s.h.

II. Restricted Electives ..... 12 sem. hrs.

EE 222	Elements of Electrical Engr.	3 s.h.	
EM 124	Mechanical Processes	3 s.h.	(Spring)
MT 224	Nuclear Metallurgy	3 s.h.	
MT 331-332	Non Ferrous Metallurgy	6 s.h.	(Offered in Fall of odd years)
MT 341-342	Steels & Their Heat Treatment	6 s.h.	(Offered in Fall of even years)
EM 234	Strength of Materials	3 s.h.	(Spring)
EM 322	Mechanics—Dynamics	3 s.h.	(Spring)

TOTAL REQUIRED FOR DEGREE ..... 70 sem. hrs.

* Entrance into these courses permitted upon satisfactory performance on placement examinations.

BACHELOR OF SCIENCE PROGRAMS

Business: Students may earn a Bachelor of Science degree in Business by majoring in one of three programs—Accounting, Business Administration, or Industrial Management.

Engineering: Students may earn a Bachelor of Science degree in Engineering by majoring in Industrial Engineering. Through the completion of the required courses and through the selection of electives, students may gain knowledge in the fields of electrical, mechanical, or metallurgical engineering; or in the field of personnel administration.

ACCOUNTING

(Bachelor of Science)

In order to acquire the Bachelor of Science in Accounting, all students are required to take basic courses in accounting, business and liberal arts. The successful completion of these courses grants the student ninety-nine semester hours credit of the one hundred twenty-six hours required for the degree. Of the remaining twenty-seven hours of credit required for the degree, eighteen hours must be elected from the group of restricted electives listed below. The remaining nine semester hours credit are elected from any field of study. Prerequisites for all electives must be satisfied either by formal courses or by equivalent practical experience.

I. Required courses, totaling ..... 99 sem. hrs.

FIRST YEAR

Fall			*Spring*		
A 111	Introductory Accounting	3 s.h.	A 112	Introductory Accounting	3 s.h.
BA 101	Law of Contracts & Bus. Associations	3 s.h.	BA 102	Law of Contracts & Bus. Associations	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

A 221	Intermediate Accounting	3 s.h.	A 222	Intermediate Accounting	3 s.h.
EC 133	Economics	3 s.h.	EC 202	Economic History of U.S.	3 s.h.
IE 114	Management Survey	3 s.h.	E 220	Technical Report Writing	3 s.h.

THIRD YEAR

A 223	Cost Accounting	3 s.h.	A 224	Cost Accounting	3 s.h.
A 331	Advanced Accounting	3 s.h.	A 332	Advanced Accounting	3 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.

FOURTH YEAR

A 333	Auditing	3 s.h.	A 334	Auditing	3 s.h.
BA 117	Business Mathematics	3 s.h.	BA 118	Business Mathematics	3 s.h.
Restricted Elective		3 s.h.	Restricted Elective		3 s.h.

FIFTH YEAR

A 335	Income Tax Procedure	3 s.h.	A 336	Income Tax Procedure	3 s.h.
P 111	Psychology	3 s.h.	PS 225	Human Relations in Management	3 s.h.
Social Studies Elective SS 113 or SS 121		3 s.h.	Social Studies Elective SS 114 or SS 122		3 s.h.

SIXTH YEAR

A 443	Accounting Systems I	3 s.h.	BA 216	Business Statistics	3 s.h.
Science Elective SC 111, PH 211, CH 201		3 s.h.	Science Elective SC 112, PH 212 CH 202		3 s.h.
Philosophy 111 or 113		3 s.h.	Restricted Elective		3 s.h.

SEVENTH YEAR

(Restricted and Unrestricted Electives totaling 27 semester hours)

II. Restricted Electives totaling 18 semester hours are selected from the following courses:

BA 111	Principles of Sales	3 s.h.	BA 221	Law of Sales	3 s.h.
BA 112	Marketing	3 s.h.	BA 222	Law of Commercial Paper & Bankruptcy	3 s.h.
BA 119-120	Office Org. & Mgmt.	6 s.h.	EC 236	Money and Banking	3 s.h.
BA 113-114	Business Finance	6 s.h.	PS 123	Personnel Administration	3 s.h.
BA 131	Public Relations	3 s.h.	PS 244	Management and Labor Relations	3 s.h.

III. Unrestricted Electives total 9 semester hours. (Any credit courses offered by the College).

TOTAL REQUIRED FOR THE DEGREE ..... 126 sem. hrs.

* Entrance into this course is permitted upon satisfactory performance on the placement examination.

BUSINESS ADMINISTRATION

(Bachelor of Science)

In order to acquire the Bachelor of Science in Business Administration, students must take a pattern of business courses. The successful completion of these courses grants the student ninety-six semester hours of credit of the 126 semester hours required for the degree. Of the remaining thirty semester hours beyond the required pattern, the student must elect eighteen semester hours from the field of business. The remaining twelve semester hours may be elected from the field of business or from any other field of study. Prerequisites for all electives must be satisfied either by formal courses or by equivalent practical experience.

I. Required courses, totaling ..... 96 sem. hrs.

FIRST YEAR

Fall			*Spring*		
A 111	Introductory Accounting	3 s.h.	A 112	Introductory Accounting	3 s.h.
BA 101	Law of Contracts & Bus. Associations	3 s.h.	BA 102	Law of Contracts & Bus. Associations	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

EC 133	Economics	3 s.h.	EC 202	Economic History of U.S.	3 s.h.
IE 114	Management Survey	3 s.h.	E 220	Technical Report Writing	3 s.h.
P 111	Psychology	3 s.h.	PS 225	Human Relations in Management	3 s.h.

THIRD YEAR

BA 111	Principles of Sales	3 s.h.	BA 112	Principles of Marketing	3 s.h.
BA 117	Business Mathematics	3 s.h.	BA 118	Business Mathematics	3 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.

FOURTH YEAR

BA 221	Law of Sales	3 s.h.	BA 222	Law of Commercial Paper & Bankruptcy	3 s.h.
PS 123	Personnel Administration	3 s.h.	PS 244	Management Labor Relations	3 s.h.
Science Elective SC 112, PH 211, or CH 201		3 s.h.	Science Elective SC 113, PH 212, CH 202		3 s.h.

FIFTH YEAR

BA 113	Business Finance	3 s.h.	BA 114	Business Finance	3 s.h.
BA 131	Public Relations	3 s.h.	BA 216	Business Statistics	3 s.h.
Social Studies Elective SS 113 or SS 121		3 s.h.	Social Studies Elective SS 114 or SS 122		3 s.h.

SIXTH AND SEVENTH YEAR

PHIL 111 or 113		3 s.h.	EC 236	Money and Banking	3 s.h.

(Restricted and unrestricted electives totaling 30 s.h.)

II. Restricted Electives totaling 18 semester hours are to be selected from the following courses:

A 221, 222	Intermediate Accounting	6 s.h.	P 112	Industrial Psychology	3 s.h.
BA 119-120	Office Org. and Mgmt.	6 s.h.	PS 242	Conference Leadership	3 s.h.
IE 133	Cost Control	3 s.h.			
IE 134	Production Control	3 s.h.			

III. Unrestricted Electives totaling 12 semester hours ..... 12 sem. hrs.
(Any credit courses offered by the College)

TOTAL REQUIRED FOR DEGREE ..... 126 sem hrs.

* Entrance into this course is permitted upon satisfactory performance on the placement examination.

INDUSTRIAL MANAGEMENT

(Bachelor of Science)

The Program of Industrial Management is designed for persons whose administrative responsibilities may be in a staff department dealing with production, cost and personnel phases of business. It does not include technical engineering work.

In order to acquire the Bachelor of Science in Industrial Management, all students must take a pattern of required courses. The successful completion of the required courses earns the student ninety-three hours of the 126 semester hours required for the degree. Of the remaining thirty-three semester hours beyond the required pattern, the student must elect twenty-four hours from restricted electives while the remaining nine semester hours may be elected from any field of study.

Required courses, totaling ..... 93 sem. hrs.

FIRST YEAR

Fall			*Spring*		
A 111	Introductory Accounting	3 s.h.	A 112	Introductory Accounting	3 s.h.
BA 101	Law of Contracts & Bus. Associations	3 s.h.	BA 102	Law of Contracts & Bus. Associations	3 s.h.
*E 113	English Composition	3 s.h.	E 114	Speech	3 s.h.

SECOND YEAR

EC 133	Economics	3 s.h.	EC 202	Economic History of U.S.	3 s.h.
P 111	Psychology	3 s.h.	PS 225	Human Relations in Management	3 s.h.
IE 114	Management Survey	3 s.h.	E 220	Technical Report Writing	3 s.h.

THIRD YEAR

BA 119	Office Organization & Management	3 s.h.	BA 120	Office Organization & Management	3 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.
PS 123	Personnel Administration	3 s.h.	PS 244	Management Labor Relations	3 s.h.

FOURTH YEAR

BA 117	Business Mathematics	3 s.h.	BA 118	Business Mathematics	3 s.h.
BA 111	Principles of Sales	3 s.h.	BA 112	Principles of Marketing	3 s.h.
Social Studies Elective SS 113 or SS 121		3 s.h.	Social Studies Elective SS 114 or SS 122		3 s.h.

FIFTH YEAR

IE 133	Cost Control	3 s.h.	IE 134	Production Control	3 s.h.
PH 111 or PH 113	Philosophy	3 s.h.	BA 216	Business Statistics	3 s.h.
Science Elective SC 111, PH 211, CH 201		3 s.h.	Science Elective SC 113, PH 212, CH 202		3 s.h.

SIXTH AND SEVENTH YEARS

IE 241	Methods & Motion Studies	3 s.h.

(Restricted and unrestricted electives totaling 33 sem. hrs.)

II. Restricted Electives totaling 24 semester hours are to be selected from the following courses:

A 221-222	Intermediate Accounting	6 s.h.	D 111	Engineering Drawing	3 s.h.
IE 119-120	Industrial Safety, Elem...	6 s.h.	EC 204	Engineering Economics	3 s.h.
BA 113-114	Business Finance	6 s.h.	EC 236	Money and Banking	3 s.h.
BA 131	Public Relations	3 s.h.	P 112	Industrial Psychology	3 s.h.
			PS 242	Conference Leadership	3 s.h.
			IE 342	Work Measurements	3 s.h.

III. Unrestricted Electives totaling 9 semester hours ..... 9 sem. hrs.
(Any credit courses offered by the College)

TOTAL REQUIRED FOR THE DEGREE ..... 126 sem. hrs.

• Entrance into this course is permitted upon satisfactory performance on placement examination.

INDUSTRIAL ENGINEERING

(Bachelor of Science)

The Program of Industrial Engineering is planned to prepare students to apply the engineering method to the problems of management in industry.

In order to acquire the Bachelor of Science in Industrial Engineering, all students must take a pattern of required courses. The successful completion of the required courses earns the student 131 hours of the 140

semester hours of credit required for the degree. The remaining nine hours of credit are selected from restricted electives in the fields of study indicated below.

Required courses, totaling ..... 131 sem. hrs.

FIRST YEAR

Fall			*Spring*	
*M 113	Trigonometry ..... 3 s.h.		*M 114	Algebra & Analytic Geometry ..... 3 s.h.
D 111	Engineering Drawing .... 3 s.h.			
*E 113	English Composition .... 3 s.h.		D 112	Drawing & Descriptive Geometry ..... 3 s.h.
			IE 114	Management Survey ..... 3 s.h.

SECOND YEAR

M 221	Diff. & Integral Calculus 3 s.h.		M 222	Diff. & Integral Calculus 3 s.h.
PH 211	Engr. Physics (with lab.) 4 s.h.		PH 212	Engr. Physics (with lab.) 4 s.h.
EC 133	Economics ..... 3 s.h.		EC 204	Engineering Economics .. 3 s.h.

THIRD YEAR

P 111	Psychology ..... 3 s.h.		EE 222	Elements of Elect. Engr. 3 s.h.
E 201	Humanities ..... 3 s.h.		E 202	Humanities ..... 3 s.h.
MT 119	Engineering Materials .. 3 s.h.		EM 124	Mechanical Processes .... 3 s.h.

FOURTH YEAR

A 113	Industrial Accounting .. 3 s.h.		E 220	Technical Report Writing ..... 3 s.h.
CH 201	Engr. Chemistry (with lab.) ..... 4 s.h.		CH 202	Engr. Chemistry (with lab.) ..... 4 s.h.
PS 123	Personnel Administration ..... 3 s.h.		PS 244	Management Labor Relations ..... 3 s.h.

FIFTH YEAR

M 323	Adv. Mathematics for Engr. I ..... 3 s.h.		EE 236	Industrial Electronics .... 3 s.h.
			EM 322	Mechanics—Dynamics .... 3 s.h.
EM 221	Mechanics—Statics ..... 3 s.h.		PS 225	Human Relations in Management ..... 3 s.h.
E 114	Speech ..... 3 s.h.			

SIXTH YEAR

IE 133	Cost Control ..... 3 s.h.		IE 134	Production Control ..... 3 s.h.
PH 331	Thermodynamics ..... 3 s.h.		PH 332	Thermodynamics ..... 3 s.h.
Social Studies Elective SS 113 or SS 121 ..... 3 s.h.			Social Studies Elective SS 114 or SS 122 ..... 3 s.h.	

SEVENTH YEAR

IE 435	Statistical Methods (with lab.) ..... 4 s.h.		IE 422	Analytical Methods ..... 3 s.h.
			IE 436	Quality Control ..... 3 s.h.
IE 241	Methods & Motion Studies ..... 3 s.h.		IE 342	Work Measurements ..... 3 s.h.
Restricted Elective..... 3 s.h.				

EIGHTH YEAR

IE 443	Factory Planning ..... 3 s.h.		Restricted Elective..... 3 s.h.	
Restricted	Elective ..... 3 s.h.			

Restricted Electives—9 sem. hrs. These electives must be selected from the following areas: Drawing and Design, Engineering, or Personnel Supervision.

TOTAL REQUIRED FOR DEGREE ..... 140 sem. hrs.

* Entrance into these courses is permitted upon satisfactory performance on the placement examinations.

INDUSTRIAL ENGINEERING—ELECTRICAL OPTION

(Bachelor of Science)

The Industrial Engineering-Electrical Option program combines basic electrical engineering with study in the field of industrial engineering.

In order to acquire the Bachelor of Science in Industrial Engineering-Electrical Option, all students must take a pattern of required courses. The successful completion of the required courses earns the student 130 hours of the 142 semester hours of credit required for the degree. The remaining twelve hours of credit are selected from restricted electives in the fields of study indicated below.

Required courses, totaling ..... 130 sem. hrs.

Fall			*Spring*		
First Year					
*M 113	Trigonometry	3 s.h.	*M 114	Algebra and Analytic Geometry	3 s.h.
D 111	Engineering Drawing	3 s.h.			
*E 113	English Composition	3 s.h.	D 112	Drawing and Descriptive Geometry	3 s.h.
			E 114	Speech	3 s.h.
Second Year					
M 221	Diff. and Int. Calculus	3 s.h.	M 222	Diff. and Int. Calculus	3 s.h.
PH 211	Engr. Physics (with lab.)	4 s.h.	PH 212	Engr. Physics (with lab.)	4 s.h.
E 201	Humanities	3 s.h.	E 202	Humanities	3 s.h.
Third Year					
M 323	Adv. Math. for Engr. I	3 s.h.	M 324	Adv. Math. for Engr. II	3 s.h.
EE 223	Prin. of Electrical Engr.	3 s.h.	EE 224	Prin. of Electrical Engr.	3 s.h.
EE 235	Direct Current Machines	3 s.h.	EE 242	A. C. Machines	3 s.h.
Fourth Year					
EE 331	A. C. Circuits	3 s.h.	EE 332	A. C. Circuits	3 s.h.
EE 233	Basic Electronics	3 s.h.	EE 236	Industrial Electronics	3 s.h.
IE 114	Management Survey	3 s.h.	E 220	Technical Report Writing	3 s.h.
Fifth Year					
CH 201	Engineering Chemistry (with laboratory)	4 s.h.	CH 202	Engineering Chemistry (with laboratory)	4 s.h.
MT 119	Engineering Materials	3 s.h.	EM 124	Mechanical Processes	3 s.h.
EC 133	Economics	3 s.h.	EC 204	Engineering Economics	3 s.h.
Sixth Year					
EM 221	Mechanics—Statics	3 s.h.	EM 322	Mechanics—Dynamics	3 s.h.
IE 133	Cost Control	3 s.h.	IE 134	Production Control	3 s.h.
PHIL 111	Intro. to Philosophy	3 s.h.	P 111	Psychology	3 s.h.
Seventh Year					
IE 241	Methods & Motion Study	3 s.h.	IE 342	Work Measurements	3 s.h.
Social Studies Elective SS 113 or SS 121		3 s.h.	Social Studies Elective SS 114 or SS 122		3 s.h.
Restricted Elective		3 s.h.	Restricted Elective		3 s.h.
Eighth Year					
IE 443	Factory Planning	3 s.h.	IE 422	Analytical Methods	3 s.h.
Restricted Elective		3 s.h.	Restricted Elective		3 s.h.

Restricted Electives totaling 12 semester hours are to be selected from the following areas: Drawing, and Design, Engineering, Industrial Management or Personnel Supervision.

TOTAL REQUIRED FOR DEGREE ..... 142 sem. hrs.

* Entrance to these courses permitted upon satisfactory performance on the placement examinations.

NEW HAVEN COLLEGE

DESCRIPTION OF COURSES

offered in the

EVENING CREDIT PROGRAM

New Haven College, 1959-1960

Description of Courses

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Courses bearing hyphenated numbers, for example, A111-112, are two semesters in length, and the first semester is prerequisite to the second. Unless otherwise noted, they may be entered only in the Fall Semester.

Courses bearing single numbers, for example, L 221 are only one semester in length.

Courses designated by letter rather than by number are not of college grade, although they involve class and preparation time equivalent to other courses.

Courses of the 100 level have no prerequisites: 200 level courses have one prerequisite: 300-level have two prerequisites; 400-level courses have three or more prerequisites, or are to be taken in the final two years of a bachelor of science program.

Accounting

A111-112. Introductory Accounting. Credit, 6 semester hours.

This course, which is prerequisite to all other courses in accounting, familiarizes the student with fundamental principles of accounting. This work is supplemented by progress tests, problems, and systematic practice work. The fields of study covered include: interpretation of assets, liabilities, and net worth; preparation of statements; books of original entry; ledgers; and work at the end of a fiscal period.

(Offered also in Spring Semester on a two nights per week basis.)

A113. Industrial Accounting. Credit, 3 semester hours.
(*This course cannot be taken by accounting and business administration majors.*)

This is a basic course designed to acquaint engineering students with the vocabulary of accounting, the accounting cycle and the presentation of accounting statements.

—Fall only.

A221-A222. Intermediate Accounting. Credit, 6 semester hours.

Prerequisite: A111-112

This course is a continuation at a more advanced level of the principles studied in Introductory Accounting. It is intensive and adapted to present-day changes in the accounting profession. The subject matter includes: the corporation, asset valuations, liabilities, installment sales and consignments, analysis and interpretation of financial statements, sources and application of funds, depreciation methods, inventory evaluation, reserves, and surplus analysis. There is considerable practice in the form of problem solutions. Reference is made to the publications of the professional accounting societies.

A223-224. Cost Accounting. Credit, 6 semester hours.

Prerequisite: A111-112

Offered in September of EVEN years. Offered in September of ODD years at Quinnipiac College.

This course embraces the study of departmental and process cost accounting, specific order cost accounting, and standard costs. Thorough consideration is given to cost elements of material, labor, and manufacturing expense. Also included is the study of cost estimating, budgets in cost control, cost relationships, and cost reports for use of management. Forms and methods used in standard costs and analyses of variances for operational use are considered. Practical application of the principles studied is given through the working of practice sets and problems.

A 331-332. Advanced Accounting. Credit, 6 semester hours.

Prerequisite: A 221-222.

This is the final general accounting course covering all phases of accounting not previously covered and not considered of a specialized nature. This course is given in two sections, neither section being dependent upon the other. Upon completion of these sec-

tions, the student is prepared for advanced study in specialized accounting and C.P.A. problems.

A 333-334. Auditing. Credit, 6 semester hours.

Prerequisite: A 221-222, may be taken concurrently.

Offered in September of ODD years. Offered in September of EVEN years at Quinnipiac College.

This course includes examination of the financial condition, review of operations, preparation of audit program, audit working papers, and report upon examination of the client's business. The accountant's relationship with the client and the ethics of the profession are thoroughly discussed. A complete laboratory test is worked out to supplement the test study. Recent developments in audit procedure are included, systems in internal check analyzed, comparisons of balance sheets and detailed audits made. A background is developed in the theory of auditing in preparation for the C.P.A. examination.

A 335-336. Income Tax Procedure. Credit, 6 semester hours.

Prerequisite: A 221-222 recommended, A 111-113 required.

This course embraces a practical application of the principles of Federal Income Tax Law to concrete situations. The problems include the preparation of corporation, fiduciary, partnership, and individual tax returns; claims for refunds, credit, and abatement; records, reports, and requirements of Social Security and state and federal unemployment taxes; and the proper accounting procedure for tax records.

A 443. Accounting Systems I. Credit, 3 semester hours.

Prerequisite: A 332, A 223.

This course deals with the principles and practices applied in developing accounting systems. Such topics are covered as the preliminary survey; principles of internal check; systems for handling cash, receivables, purchases, sales and payrolls; special journals, ledgers, and statements. —Fall only.

A 444. Accounting Systems II. Credit, 3 semester hours.

Prerequisite: A 443.

A continuation of Accounting Systems I in which the principles studied are observed and analyzed through field trips to businesses and institutions which can best demonstrate the various types of accounting systems. The student is taught how to develop and adapt accounting systems according to the needs of different operations. —Spring only.

Business Administration

BA 101-102. Law of Contracts and Business Associations. Credit, 6 semester hours.

This course involves a study of basic principles of the law of contracts, agency, partnerships, limited partnerships, and corporations.

Contracts will involve a study of the formation of contracts, capacity of parties, offer and acceptance, performance, and discharge. Agency will deal with the appointment of agents, the relationship of principal and agent, power of the agent to bind his principal, duties of agent and principal to one another and to third parties.

Business associations will involve a study of the law relating to the formation and operation of the usual types of business organization. Also considered is the legal relationship among the individuals within the business organization as well as their relationship with third parties.

BA 111. Principles of Selling. Credit, 3 semester hours.

This course presents definite techniques and basic principles of selling and how to get along with people. It includes the study of: prospect selection, knowledge of the product, pre-approach and approach, demonstration, meeting objections, close and departure. Desirable personality traits of the salesman are considered. Each student will have opportunities to demonstrate his ability to sell a given product by means of a class demonstration. —Fall only.

BA 112. Principles of Marketing. Credit, 3 semester hours.

A study of the fundamental principles of the flow of goods and services from producer to consumer. Buying, selling, transportation, storage, grading, risk-taking, financing, and supplying market information are all reviewed to determine their importance in the marketing and economic structure. —Spring only.

BA 113-114. Business Finance. Credit, 6 semester hours.

After a brief study of the various forms of business organization, the corporate form of organization is studied in greater detail. Classes of stocks and bonds and the rights of the holder are considered. Management and distribution of income are examined in detail with regard to surplus and dividend policies, reserves, depreciation, and financing of expansion. Stress is placed on the internal control of finances through budgets and organization as well as financing through banks and investment houses.

BA 117-118. Business Mathematics. Credit, 6 semester hours.

A study of fundamental mathematical processes and their application in business. Some of the subjects included are percentage, proportion, interest, discount, annuities, mark-up and margins, logarithms, the use of the slide rule, and an introduction to statistical methods.

BA 119-120. Office Organization and Management. Credit, 6 semester hours.

This course considers the profession of office supervision and management by a study of the qualifications, responsibilities, and functions of the office manager. It deals with the organization of an office with respect to its personnel, physical layout, and equipment. The various departments of an office, such as filing, stenographic, credit, are analyzed. The place and function of the office in the whole organization of the business is studied. Attention is given to costs and budgets.

BA 131. Public Relations. Credit, 3 semester hours.

This course deals with the main principles of public relations, and how they are applied in specific cases. It shows how the practice of public relations is used by individuals, groups, companies and organizations to gain public understanding and acceptance, and to improve their relations with everyone in a position to affect their welfare. One of the course requirements is a paper evaluating a public relations program. —Fall only.

BA 216. Business Statistics. Credit, 3 semester hours.

Prerequisite: BA 117-118.

A course offering a sound foundation in statistical methods as applied in business, government, institutional, and research organizations, as well as in personal use. Major topics include the planning of investigations, sampling, sources and the collection of data, tabulation, ratios, graphs, frequency distribution, measures of central tendency and dispersion, index numbers, time series, seasonal and cyclical movements, trends, correlation, the normal curve, and the statistical report. Practical problems are used to emphasize and impress the textual materials.

BA 221. Law of Sales. Credit, 3 semester hours.

Prerequisite: BA 101-102.

Offered in September of ODD years.

This course is an advanced study of Business Law comprising: bailments; duties and liabilities of bailees, common carriers, and warehousemen; the laws governing the rights of parties engaged in the transfer of personal property. Questions of title, risks assumed, rights of creditors, express and implied warranties, buyers' and sellers' remedies, together with the business background out of which such relations arise are also considered.

—Fall only.

BA 222. Law of Commercial Paper and Bankruptcy. Credit, 3 semester hours.

Prerequisite: BA 101-102.

Offered in February of EVEN years.

This course is a study of the Negotiable Instruments Law, dealing with negotiable

promissory notes, bills of exchange and bank checks with an analysis of their form and function in commercial transactions. A brief survey of bankruptcy procedure under the federal bankruptcy laws is considered. —Spring only.

Chemistry

CH 201-202. Engineering Chemistry. Credit, 8 semester hours, with laboratory.

Prerequisite: PH 211-212.

Presents a systematic study of the fundamental principles of chemistry and the chemical reactions of the elements and their compounds together with application chosen for their theoretical and industrial importance and also for their value in providing a basis for subsequent technical courses.

Laboratory and Breakage Fee: $12.50 per semester.

Drawing and Design

D 111. Engineering Drawing. Credit, 3 semester hours.

This is an elementary course in engineering drawing designed to teach the use of instruments, the fundamental principles of projection, drafting room standards and conventions, lettering, selection and use of scales, orthographic projections, revolutions, developed surfaces, intersections and auxiliary views, and the making and dimensioning of complete working drawings of simple machine parts.

D 112. Drawing and Descriptive Geometry. Credit, 3 semester hours.

This course is a continuation of Engineering Drawing but includes the basic principles of space relationships with emphasis on the solution of engineering problems. Principal views; auxiliary views, oblique views, line and plane problems, revolution, surfaces and developments, surfaces and intersections, and warped surfaces, are studied.

D 333-334. Elementary Machine Design. Credit, 6 semester hours.

Prerequisites: D 111-112, EM 221 and EM 234.

Offered in September of EVEN years.

The first semester of this course consists of a study of the elements of design. The second semester considers the analysis and design of such elements as fastenings, bearings, gears, shafts, clutches, pulleys, and cams. Some machine parts are studied from the standpoint of kinematics, and their motions are analyzed.

D 335-336. Elementary Tool Design. Credit, 6 semester hours.

Prerequisites: D 111-112 and EM 234.

Offered in September of ODD years.

The objective of this course is to present and develop the basic techniques of tool design through lectures, class discussions, and student design problems. Major topics considered are: methods analysis, drill jig design, tolerances and allowances, cutting tools, die design, gages and gaging policies, milling fixtures, turret lathe tooling, and cam designs for automatic screw machines.

D 441-442. Advanced Machine Design. Credit, 6 semester hours.

Prerequisites: D 333-334.

Offered in September of ODD years.

Following a review of the elements of machine design studied in the first year, complete designs are individually selected and developed by the student. Advanced problems, such as balancing and critical speeds, are considered the latter part of the year.

D 445-446. Advanced Tool Design. Credit, 6 semester hours.

Prerequisites: D 335-336

Offered in September of EVEN years.

This course will consider the interrelationships of tool design with the pertinent elements of tool engineering such as: planning, processing, estimating, and tooling costs. Student tool design work will be of a group nature entailing the complete planning and designing necessary to manufacture machine parts and die work. Major topics considered are: locating and clamping theory, tooling economics, tool estimating, and process planning.

Economics

EC 133. Economics. Credit, 3 semester hours.

The course aims at an understanding of the principles, institutions, and practices which form the basis of our economic system and activity. Such aspects of our economy as production, price, exchange, and distribution will be considered. The course examines the basic economic aspects of capitalism and the other "isms". Opportunity is offered to the student to do independent work in the field of his own specialized interest.

—Fall only.

EC 202. Economic History of the United States. Credit, 3 semester hours.

The development of American economic life in the various stages of agriculture, trade, industry, finance, and labor. The change of economic practices and institutions particularly in the realms of business, banking, and labor is stressed as well as the changing role of government. —Spring only.

EC 204. Engineering Economics. Credit, 3 semester hours.

Prerequisite: EC 133.

A quantitative analysis of applied economics in engineering practice; the economy study for comparing alternatives; interest formulas; quantitative methods of comparing alternatives; intangible considerations; selection and replacement economy for machines and structures; break-even and minimum cost points; depreciation; relationship of accounting to the economy study; review of current industrial practices. Aims to promote logical decisions from the consideration of alternative courses of action. —Spring only.

EC 236. Money and Banking. Credit, 3 semester hours.

Prerequisites: EC 133, and EC 202 or EC 204.

The paper, silver and gold standards for our currency are reviewed; why the gold bullion standard was adopted; economic importance of the commercial and other types of banks; the development of commercial banking policies since 1920; the rise of consumer credit; the Federal Reserve System as a regulator of banking and as an aid to Federal Financing. —Spring only.

Electricity

EE 222. Elements of Electrical Engineering. Credit, 3 semester hours.

This course cannot be taken for credit by electrical engineering students who have passed EE 224.

Prerequisites: M 114, PH 212.

The fundamental concepts of electricity and magnetism and their application to electrical circuiting and electromagnetic devices are considered. Electrical measuring techniques and industrial applications of electrical machinery are also pointed out. Problems involving simple mathematics accompany such class assignments. —Spring only.

EE 223-224. Principles of Electrical Engineering. Credit, 6 semester hours.

Prerequisites: PH 212, M 221-222. (M 221-222 may be taken concurrently.)

This course consists of the fundamental concepts of electricity. It includes Ohm's law and Kirchoff's laws, a study of the properties of conductors and insulators, nonlinear resistance circuits, magnetic circuits and fields, induced and generated electromotive force, and the dielectric circuit. A brief survey is made of the a-c circuits, d-c and a-c machines and electronic tubes and circuits.

EE 233. Basic Electronics. Credit, 3 semester hours.

Prerequisite: EE 222 or EE 224.

This course includes a study of electron ballistics, thermionic emission, various tube types and characteristics, methods of analyzing vacuum tubes and vacuum tube circuits, analysis and design of small signal and large signal amplifier circuits, vacuum tube oscillators, modulation and detection, gas tubes, rectifiers and filters.

—Fall only.

EE 235. Direct Current Machines. Credit, 3 semester hours.

Prerequisite: EE 222 or EE 223. (EE 223 may be taken concurrently.)

This course includes a review of the fundamental laws of direct current circuits and magnetic circuits; mechanical construction of the d-c machine; magnetic circuits of d-c machines, flux leakage; leakage around windings embedded in slots; armature and field windings; electromotive and magnetomotive forces of the armature, armature reaction; commutation; generator and motor characteristics; stability of motors; special machines, such as 3-wire generator, arc-welding generator, diverterpole generator, dynamotor, rototrol generator, Rosenberg generator (amplidyne), multistage rototrol; losses and heating in d-c machines; starting of d-c motors (manual and automatic starters). Laboratory work is also included. —Fall only.

EE 236. Industrial Electronics. Credit, 3 semester hours.

Prerequisite: EE 222 or EE 224 or EE 233.

Analysis and design of the electronic components used in industrial processes; performance tests on selected electronic apparatus such as power rectifiers, motor controls, voltage regulators, radio frequency heating equipment, resistance welding controls, and introduction to feedback control systems.

—Spring only.

EE 242. Alternating Current Machines. Credit, 3 semester hours.

Prerequisite: EE 222 or EE 223.

The basic theory of AC circuits and DC machines is combined with electromagnetics in a study of basic AC machinery. Single phase, poly-phase and auto transformers, poly-phase alternators and induction motors, poly-phase synchronous motors, paralleling alternatives, and single phase-motors of various types are covered. Application of the various devices are considered. Laboratory work in this equipment supplements the lectures.

—Spring only.

EE 252. Illumination. Credit, 3 semester hours.

Prerequisite: EE 222 or EE 223.

This course includes a study of the design of lighting systems for best seeing and a maximum efficiency. Photometric units and measurements, properties of the eye, characteristics of lamps and luminaires, daylight and fluorescence. —Spring only.

EE 331-332. Alternating Current Circuits. Credit, 6 semester hours.

Prerequisites: EE 223-224 and M 323 (M 323 may be taken concurrently.)

This course covers the fundamental theory of single phase and polyphase alternating current circuits, instruments and measurements. The concepts of vector algebra and Fourier analysis are applied to steady-state solutions of AC networks, and differential equations are applied to the transient analysis of circuit elements.

EE 347-348. Electronic Engineering. Credit, 6 semester hours.

Prerequisites: EE 331-332 and M 323 (M 323 may be taken concurrently.)

This course is largely concerned with the discussion of basic circuits making up more complex electronic devices. A large part of the course is assigned to the analysis of apparatus used in practice, both in industry and communications. Both audio and high-frequency systems will be analyzed during the second semester.

EE 437. Electric Power Transmission. Credit, 3 semester hours.

Prerequiste: EE 331-332.

Offered in September of EVEN years.

This course considers generating equipment, metering, switching and protective devices, types of transformers and transformer connections, transmission line calculations, system protection and distribution systems. —Fall only.

EE 441-442. Electronic Computers. Credit, 6 semester hours.

Prerequisites: EE 347-348 and M 323-324 (M 323-324 may be taken concurrently.)

This course includes a study of the systems for solving complex mathematical problems by electronic techniques; the fundamental properties of differential analyzers, analog and digital computers with particular emphasis on the logical structure of components (such as adders, multipliers, counters, registers, etc.) and the interrelations necessary for fully automatic operations. Laboratory work is also included.

EE 445-446. Communications Circuits. Credit, 6 semester hours.

Prerequisites: EE 347-348 and M 323.

Offered in September of EVEN years.

This course includes the analysis of communication circuits and the design of the components of communication systems, performance testing of receivers, transmitters, power amplifiers and other elements of telephone, carrier current, telemetering, radio, television, remote control and speech amplifying systems.

EE 450. Transistor Electronics. Credit, 3 semester hours.

Prerequisite: EE 331-332.

This course includes the theory of semi-conductors, and the properties of semi-conductor devices; characteristics of point contact and junction transistors; the four-terminal networks, equivalent circuits, stability, power gain and cascading problems. Low frequency amplifiers. High frequency circuits, high frequency amplifiers. Application of semi-conductor devices in amplifiers, oscillators, modulators, and computers.

—Fall only.

EE 451-452. Network Analysis. Credit, 6 semester hours.

EE 331-332 and M 323-324. (M 323-324 may be taken concurrently).

Offered in September of ODD years.

This course includes the formulation of the basic notions in network theory, with emphasis on the n-pole. General techniques of circuit analysis and their application to the analysis of vacuum tube, transistor, and other types of circuits. Standard modes of characterization of n-terminal-pair networks and an analysis of the basic properties of various types of network functions. Synthesis of passive and active networks including synthesis of two-poles by the Brune and Bott-Duffin methods; synthesis of four-poles, synthesis of RC networks; time domain methods.

EE 455-456. Servomechanisms and Feedback Control Systems. Credit, 6 semester hours.

Prerequisites: M 323 and EE 348 or EE 446 or EE 452.

Offered in September of EVEN years.

This course includes the differential equations of dynamical systems, analogues, linearization techniques, block diagram representation, concept of transfer function, classical servomechanisms, transient analysis and synthesis, frequency spectrum analysis and synthesis, stability criteria, transfer loci, compensation methods, use of inverse plane. Bode plot, straight line approximations, gain-phase relationships, Nyquist plots and root-locus technique. Correlation between root-locus and frequency loci, compensation using root-locus, multiple loop systems, block diagram reduction techniques, multipole systems, and the use of describing function for linearization.

Engineering Mechanics

EM 124. Mechanical Processes. Credit, 3 semester hours.

This course is designed to acquaint the student with the basic metal cutting processes. Machining properties of metals are developed both with respect to single and multiple point metal cutting tools as well as the adaptability of standard and special machine tools employed by the metal industry. The lathe, milling machine, planer, shaper, saw and other allied machine tools where metal is removed by chip formation are specifically covered. Simultaneously, the selection and application of basic cutting tool materials is developed for each basic machine. The approach is planned to enable the engineer to choose or substitute several basic machine tools for specific applications.

EM 221. Mechanics—Statics. Credit, 3 semester hours.

Prerequisites: M221-222 and PH 112.

This course includes the theory and application of the principles of static equilibrium, stress in framed structures, friction, center of gravity, and moments of inertia.
—Fall only.

EM 234. Strength of Materials. Credit, 3 semester hours.

Prerequisite: EM 221.

This course considers the theory of stress and resistance of materials; stress distribution and riveted joints, shafts, beams, and columns; and principal stresses. —Spring only.

EM 322. Mechanics—Dynamics. 3 semester hours.

Prerequisites: EM 221 and M 221-222.

A study is made of the application of the principles of dynamics to the analysis of special topics in machines, such as the effect of inertia, flywheel design, balancing, governors, and gyroscopic effects. An introduction to vibration and critical speeds is presented.
—Spring only.

EM 333. Mechanisms (Kinematics). Credit, 3 semester hours.

Prerequisites: EM 221 and M 221-222.

Offered in September of ODD years.

Linkages comprising mechanisms are studied as well as the graphical analysis of displacements, velocities and acceleration in mechanisms, including the use of instantaneous centers. Design of cams is considered, and an analysis is made of belt drives, gear profile action, and gear trains. —Fall only.

English

E A Basic Grammar. One semester. No credit.

The objectives of this course are: first, to teach the student the fundamental principles upon which good English is based; second, to give him practical experience in the use of themes, recitations, notebooks, and conferences; and to train him in the use of the dictionary. Special work is prescribed for those whose preparation is inadequate and for those who show need of review. —Either Fall or Spring.

E B. Reading Laboratory. One semester. No credit. Tuition $60.00

This course aims at helping the student to read faster and to increase comprehension. The objectives are more effective study habits, increased vocabulary, the enjoyment of reading and the development of independent thinking. The subject matter includes methods and mechanics of reading, use of the dictionary, values in words, patterns of writing, the outline, rationality of argument, propaganda, and literary values. The work of the course includes reading and exercises in the text, vocabulary exercises, supervised reading for speed, training films and discussion. —Either Fall or Spring.

E 113. English Composition. Credit, 3 semester hours.

Prerequisite: Satisfactory performance on English Placement Examination, either at admission or at the completion of EA Basic Grammar.

This course is designed primarily to help students learn to write by writing—to develop the ability to organize thoughts quickly and effectively, to write with speed and facility, and to use simple written English. —Either Fall or Spring.

E 114. Speech. Credit, 3 semester hours.

This course serves as an introduction to the principles of speech. The objectives are: to develop in the student proficiency in the use of vocal and bodily aids in various speaking situations, and to help the student gain confidence and fluency when speaking extemporaneously, as in group discussions, or in everyday conversation. Recordings are used for self-analysis and criticism. —Either Fall or Spring.

E 118. Modern Literature. Credit, 3 semester hours.

This course is designed to give the student a general understanding of the various kinds of literature being written today and to acquaint him with representative samples of recent fiction, biography, essays, poetry, and drama. The reading and classroom discussion will be

supplemented by lectures which will attempt to provide certain theories of criticism and to increase the student's enjoyment and appreciaion of literature. —Spring only.

E 201-202. Humanities. Credit, 6 semester hours.

Prerequisite: E 113.

An approach to man's perennial search to find meaning for his place in the universe and perspective for his systems of knowledge. Dealing with selected intellectual, ethical and aesthetic problems, the student is introduced to some classics in literature, history, philosophy and art which provide the foundations of contemporary culture. Extensive reading in primary sources is expected.

E 220. Technical Report Writing. Credit, 3 semester hours.

Prerequisite: E 113

Included in this course of writing for the engineering, management and business student is the study and analysis of the professional scientific paper, the preparation of reports on the technical and semi-technical level and an introduction to the principles of business letter writing. Emphasis is placed on the study and writing of the internal plant memorandum and report. —Either Fall or Spring.

Industrial Engineering

IE 114. Management Survey. Credit, 3 semester hours.

This is an introductory course in management. It introduces the student to all the major functions of industry, their interrelationship, and how they are brought together through organization. Thus the student receives instruction in the preliminaries of methods, cost, production control, product development, finance, physical facilities, quality control, plant engineering, industrial relations, job evaluation, sales, advertising, budgets, and records. —Either Fall or Spring.

IE 119-120. Industrial Safety, Elementary. Credit, 6 semester hours.

The approach to the subject of industrial safety is from an analytical and scientific viewpoint. It aims to give a foundation to the student upon which he can build a better knowledge of safety and accident prevention. Each student will be required to give at least two talks before the class on a relevant subject and present a written report of not less than one thousand words. Safety talks of this course will be recorded and played back to the class for criticism and suggestion in order to increase the individual's ability in safety presentation.

IE 133. Cost Control. Credit, 3 semester hours.

A large percentage of the cost of a product is incurred by the supervisors and foremen through whose departments the product passes on its way from raw material to finished state. To control and reduce this cost is an important part of their job. Only if they understand all the factors comprising such costs can they accomplish this end. This course will familiarize them with the elements of cost neccssary to control, stressing particularly the indirect or overhead elements—their measurement and control. —Fall only.

IE 134. Production Control. Credit, 3 semester hours.

The instruction stresses the basic principles that govern production control in an industrial plant. These principles are worked out in the problems of procuring and controlling materials, in routing, scheduling, and dispatching. The intent of the course is to familiarize the student with the use of the most up-to-date methods in this field, including visual control systems. —Spring only.

IE 221-222. Industrial Safety, Advanced. Credit, 6 semester hours.

Prerequisite: IE 120.

Offered in September of EVEN years.

The advanced course covers more specialized work. In addition to discussion of special hazards, including occupational diseases, it is expected that students will, during the course of instruction, be doing advanced work in speaking and writing on safety subjects.

There will be some laboratory work in connection with this course. The use of field instruments required for occupational disease studies will be thoroughly covered. Demonstration of visual and sound technique in the preparation of safety education material is also provided. The emphasis throughout will be on creative work.

IE 241. Methods and Motion Study. Credit, 3 semester hours.

Prerequisite: IE 114.

The first half of the course presents the techniques of process and motion analysis and the principles of motion economy. These are demonstrated from applications drawn from an extensive film library. The second half comprises intensive work in the laboratory. Practical problems from shops and offices are analyzed for improvement. Motion pictures are taken of the improved jobs and these pictures are then subjected to a micromotion analysis. By this means the student becomes motion conscious and better able to apply correct principles of motion to jobs, through his ability to visualize motion sequences.

—Fall only.

IE 342. Work Measurements. Credit, 3 semester hours.

Prerequisite: IE 241.

A basic time study course. Job breakdown into elements. Use of stop watch and other timing devices. Analysis of recorded data, application of normalizing and fatigue factors. Computation of standard times. The setting of synthetic time standards from standard data and the use of charts and curves to simplify applications are demonstrated. Uses of standard data for improvement of methods, tools, fixtures, and machines, and for cost control. Time studies are made on a variety of hand and machine operations performed in the laboratory. Facility in rating of time studies is aided by concentrated rating sessions utilizing films. —Spring only.

IE 422. Analytical Methods in Industrial Engineering. Credit, 3 semester hours.

Prerequisite: M 323.

Applications of modern algebraic methods in industrial practice. Topics covered include game theory, mathematical programing, and statistical methods.

—Offered in Spring of EVEN years.

IE 435. Statistical Methods (with Lab.) Credit, 4 semester hours.

Prerequisite: M 323.

This course consists of lecture and laboratory work and an introduction to the application of statistical techniques to industrial and engineering problems, probability and distribution theory, measures of central tendency and dispersion in relation to population and samples: statistical inference problems classified in terms of (1) estimation procedures, (2) tests of hypotheses, and (3) confidence intervals: differentiation of Type I and Type II errors and their significance for problems of statistical inference.

—Offered in Fall of ODD years.

IE 436. Quality Control. Credit, 3 semester hours.

Prerequisite: IE 435.

This course studies economics of quality control; modern methods used by industry to achieve quality of product; preventing defects; organizing for quality; locating chronic sources of trouble; co-ordinating specifications, manufacturing, and inspection; measuring process capability using inspection data to regulate manufacturing processes; control charts; selection of modern sampling plans. —Offered in Spring of EVEN years.

IE 443. Factory Planning. Credit, 3 semester hours.

Prerequisite: IE 342.

Factors in plant location, design and layout of equipment. The basic principles of obtaining information essential for carrying out such investigations. This is a survey course which also covers briefly such practices as material handling, storage and storeroom, maintenance, and service departments in modern factories. —Fall only.

Mathematics

M A-B. Basic Mathematics I. No credit. **Meets 2 nights a week per semester.**

This course in mathematical methods represents the fundamental operations of algebra and the application of these operations to problems. Topics discussed include the theory of equations, factoring, and fractions. In geometry the concept of proof is emphasized and applied, and the properties of the triangle are considered. —Either Fall or Spring.

M C-D. Basic Mathematics II. No credit. **Meets 2 nights a week per semester.**

Prerequisite: M A-B or equivalent.

The study of algebra is continued in this course and includes the following subjects: the quadratic equation, ratio and proportion, variation, and the trigonometry of the right triangle. In geometry the circle is discussed and studied, and consideration is given to similar figures and areas. —Either Fall or Spring.

M 113. Trigonometry. Credit, 3 semester hours.

Prerequisites: M C-D or equivalent.

This course is devoted entirely to the study of trigonometry. The topics studied include trigonometric functions, fundamental relations, solutions of right and oblique triangles, trigonometric reductions, angular measure, graphs of the functions, composite angles, inverse functions and logarithms.

M 114. Algebra and Analytic Geometry. Credit, 3 semester hours.

Prerequisites: M C-D or equivalent.

The fundamental operations of algebra are thoroughly review and various topics such as the function concept, variation, synthetic division, complex numbers are studied. Special emphasis is placed on the solution of word problems. The analytic geometry of the straight line, circle and parabola is studied in detail. —Spring only.

M 221-222. Differential and Integral Calculus. Credit, 6 semester hours.

Prerequisites: M 113, M 114.

In this course, the limit concept, the derivative and its applications to problems involving maxima and minima are carefully studied. The differentiation and integration of the power function are studied concurrently and are applied to problems in physics and science. These include areas, volumes of revolution, centroids and moments of inertia of planes and solids of revolution, and differentials. The differentiation and integration of the trigonometric exponential, and logarithmic functions are carefully studied. The functions are then applied to problems.

M 323. Advanced Mathematics for Engineers I. Credit, 3 semester hours.

Prerequisite: M 222.

This course provides an opportunity for students to follow through to completion many of the topics introduced in Differential and Integral Calculus and to study the applications of those topics. The course is further designed to provide a better mathematical background for the study of advanced engineering courses by including partial differentiation, multiple integration, infinite series and an introduction to ordinary differential equations. —Fall only.

M 324. Advanced Mathematics for Engineers II. Credit, 3 semester hours.

Prerequisite: M 323.

This course continues the study of some of the advanced mathematical techniques used in the solution of engineering problems. Included will be ordinary and partial differential equations, Fourier series, vector analysis, an introduction to the functions of a complex variable by means of the Fourier integral and the Laplace transformation. —Spring only.

Analytical Methods in Industrial Engineering (IE 422) see page 63.

Business Mathematics (BA 117-118) see page 56.

Metallurgy

MT 119. Engineering Materials. Credit, 3 semester hours.

A survey of the principal metals used as engineering materials with concentration on the properties and applications of ferrous alloys. Attention is directed to the production of these materials, methods of fabrication and typical properties of the finished product. This course is designed to offer the student a complete coverage of the elements of physical metallurgy. In general, the avenue of approach is designed to assist engineers who must select metals and alloys for engineering use. Suitable laboratory work is included.

—Fall only.

MT 220. Metallography. Credit, 3 semester hours.

Prerequisite: MT 119.

In this course the relations between equilibrium diagrams, heat diagrams, structures, and physical properties of both ferrous and non-ferrous metals and alloys are stressed. Attention is given to pyrometric measurements, automatic temperature control apparatus, gas and electric heat-treating furnaces, and quenching methods and media, and preparation of metallurgical specimens for microscopic examination. —Spring only

MT 224. Nuclear Metallurgy. Credit, 3 semester hours.

Prerequisite: MT 119.

The content of this course will include:

General discussion of nuclear reactors, production and fabrication of uranium metal and alloys, metallurgy of zirconium, thorium, plutonium, beryllium, liquid metals used in nuclear reactors, fabrication of reactor components, non-destructive materials testing and the radiation damage of materials.

This is a lecture course with a limited number of laboratory demonstrations.

—Spring only.

MT 331-332. Non-ferrous Metallurgy. Credit, 6 semester hours.

Prerequisite: MT 220.

Offered in September of ODD years.

The physical metallurgy of aluminum, magnesium, copper, nickel, zinc, lead, tin and their alloys is covered by lecture, discussion and laboratory work. Melting, alloying, casting, extruding, rolling, drawing, and heat treatment of the metals are studied with emphasis on the efforts of variables and reasons therefor. Typical mill and service difficulties are analyzed in light of the specific fundamental principles involved.

MT 341-342. Steels and Their Heat Treatment. Credit, 6 semester hours.

Prerequisite: MT 220.

Offered in September of EVEN years.

The course covers the principal grades of carbon and alloy steels employed for press, structural, automotive, tool and die as well as stainless applications. Cast irons are also included as competitive material. The fundamentals such as the iron-carbon phase diagram, transformation diagrams, grain size and hardenability are studied. The lectures and discussions are supplemented by laboratory work where the student is trained to recognize typical microstructures of steel as affected by heat treatment.

Personnel Supervision

PS 123. Personnel Administration. Credit, 3 semester hours.

Prerequisite: P 111.

The aim of this course is to provide a foundation in fundamental concepts and a general knowledge of techniques in the administration of personnel relations.

The course covers such subjects as the nature of personnel administration, the handling of personnel problems, employee attitudes and morale. Such techniques of personnel administration as recruitment, interviews, placement, training, employee rating as well as wage policies and administration are dealt with. In order to secure breadth and depth in the approach to personnel problems, simple case studies are used at appropriate points throughout the course. —Fall only.

PS 225. Human Relations in Management. Credit, 3 semester hours.

Prerequisite: P 111.

This course continues the study of human relations begun in PS 123 with accent upon the individual's relation to his co-worker. Basic psychological concepts such as motivation, personality, morale, etc. establish the groundwork for discussion within the class of the case studies dealing with associates, subordinates and superiors. —Spring only.

PS 242. Conference Leadership. Credit, 3 semester hours.

Prerequisite: PS 123.

This course is designed to accomplish two main objectives: (1) study in the principles and problems peculiar to conducting business conferences, training conferences, or union-management discussion and (2) practice in conference leadership. Original and creative work is required in the subject matter of the practice conferences. The student may meet this requirement by the completion of a research project in some area of his previous study, or by submitting adequate conference plans based upon practical experience and research on his job. —Spring only.

PS 244. Management-Labor Relations. Credit, 3 semester hours.

Prerequisite: PS 123 or PS 225.

This course aims to present the problems involved in the relations of management and labor. It begins with a history of the labor movement, then considers the intervention of government in labor relations, and explains the legal framework within which plant practices evolve. The discussion of current practices in negotiation, in grievance handling, and in the settlement of disputes is designed to bring out a point of view which may contribute to a greater stability in relations. When possible, guest speakers contribute to the establishment of that point of view. —Spring only.

Philosophy

PHIL. 111. Introduction to Problems of Philosophy. Credit, 3 semester hours.

An introduction to reflective thinking on such central issues of human life as man's place in the universe, how we discover truth, the nature of beauty and the good, and the basis of moral choices. Ideas of a few major philosophers from Plato to Dewey will be presented. Stimulation of individual clear thinking upon life's most vital problems will be emphasized in discussion. —Fall of odd years.

PHIL. 113. Introduction to the History of Philosophy. Credit, 3 semester hours.

The purpose of this course is to instruct the student in the traditions of philosophic thought in the Western cultural heritage.

A chronological development beginning with Pre-Socratic thinkers and coming down to Kant and Hegel is considered. The thoughts of individual men such as Aristotle, St. Thomas, Spinoza, Kant, and others are studied in their important aspects and related to surrounding circumstances. By this means, major philosophic attitudes are outlined.

—Fall of even years.

PHIL. 222. Ethics in a Changing Society. Credit, 3 semester hours.

Prerequisite: PHIL. 111 or 113.

A constructive appraisal of the major ethical systems in the framework of the problems of contemporary society. Ethical norms which point to the goals and ends of life and their relation to the issues of science, business, the professions and other human activities are examined in problem studies. —Spring of odd years.

PHIL. 224. Logic and Scientific Method. Credit, 3 semester hours.

Prerequisite: PHIL. 111 or PHIL. 113.

The purpose of this course is to introduce the student to the formal rigors of deduction, warranted induction, and scientific description, so far as they bear on the theory, application and limits of scientific method.

Class procedure consists of developing the main problems in the logic science, presenting main points via examples, and discussion of applications.

—Spring of even years.

Physics

PH 211-212. Engineering Physics. Credit, 8 semester hours. (With laboratory period each semester.)

Prerequisites: M 113 and M 114.

This is a basic course in physics for technical students with lectures and demonstrations. Attention is paid to the basic principles of physics including mechanics, motion, velocity, acceleration, electricity, heat. The course stresses use of the slide rule, applied mathematics and graphical methods of presentation and analysis. The course aims to develop the habit of using correct methods of thinking and analysis in the solution of engineering problems. Laboratory and Breakage Fee: $12.50 per semester.

PH 315. Nuclear Physics. Credit, 3 semester hours.

Prerequisite: PH 212 or equivalent.

This course includes a survey of the developments in contemporary theories of atoms, molecules, matter and radiation; introduces the student to basic concepts necessary to the understanding of the properties of nuclear particles, natural and artificial radioactivity, nuclear disintegrations, cosmic rays, mesons and the application of nuclear phenomena to some practical problems. —Fall only.

PH 331-332. Thermodynamics and Heat Power. Credit, 6 semester hours.

Prerequisites: PH 211-212, M 221-222.

This course begins with a study of thermodynamics which covers the first and second laws of thermodynamics and their applications to general type problems. With this groundwork established, the course proceeds to deal with the various industrial applications of this work such as: fans, blowers, pumps, flow systems, refrigeration, and air conditioning, and elements of steam power. A treatment of heat transfer concludes the course.

Psychology

P 111. General Psychology. Credit, 3 semester hours.

This course is designed to give the student a general knowledge of the important principles of human behavior. Topics included are: motivation, emotion, learning, personality, intelligence, etc. The utilization of psychological knowledge in relation to everyday human activities will be emphasized. —Either Fall or Spring.

P 112. Industrial Psychology, 3 semester hours.

Prerequisite: P 111.

This course is concerned with the applications of psychological principles and knowledge to industrial situations. Topics considered include the causes of behavior, attitudes, morale, measurements of proficiency, selection of employees, acquisition of skills, motivation and work, fatigue, accidents and physical environment.

Science

SC 111-112. Modern Science. Credit, 6 semester hours.

A survey of the methods of science and the place of physical science in our modern world. The material covered is taken from astronomy, physics, chemistry and geology, with the emphasis on the unity of physical science as a field of knowledge. The aim of the course is to develop a scientific attitude of mind and to provide a summary for the student of man's knowledge about the world in which he lives.

Social Studies

SS 113. Sociology. Credit, 3 semester hours.

This course is a study of the role of culture in society; the person and personality; groups and group behavior; institutions; social interaction and social change.

—Fall only.

SS 114. Problems in Sociology. Credit, 3 semester hours.

Prerequisite: SS 113.

From the principles covered in Sociology 113, the student studies the major problems which confront the present social order and the methods in practice and being considered for dealing with these problems. —Spring only.

SS 121-122. Political Science. Credit, 6 semester hours.

This course deals with the structure and functions of the national government, party organization, national and state relations, and American politics as compared to other countries and the trends in modern politics.

In the second semester state and local governments are studied.

Spanish

Spanish 101-102. Elementary Spanish. Credit, 6 semester hours.

An introduction to Spanish stressing pronunciation, aural comprehension, and basic conversation; instruction in the fundamental principles of grammar; training in reading comprehension.

NEW HAVEN COLLEGE

The Daytime Cooperative Program

OFFERING THE DEGREE ASSOCIATE IN SCIENCE

New Haven College, 1959-1960

Calendar

THE DAYTIME COOPERATIVE PROGRAM

1959-1960

The Cooperative Program consists of alternate periods of study and work; therefore, the students are divided into two groups—Group A and Group B.

Group A

PERIOD 1—STUDY

	1959
Last day of application	Aug. 14
Registration	Aug. 31
Tuition due on or before	Aug. 31
Day classes begin	Aug. 31
*Evening classes begin	Sept. 17
Classes end	Nov. 6

PERIOD 2—COOPERATIVE WORK

Work period begins	Nov. 9
Work period ends	Jan. 22, 1960

PERIOD 3—STUDY

	1960
Tuition due on or before	Jan. 25
Classes begin	Jan. 25
Washington's Birthday (holiday)	Feb. 22
Classes end	Apr. 1

PERIOD 4—COOPERATIVE WORK

Work period begins	Apr. 4
Work period ends	June 10

Group B

PERIOD 1—COOPERATIVE WORK

	1959
Last day of application	Aug. 28
Registration	Sept. 12
Tuition due on or before	Sept. 12
*Evening classes begin	Sept. 17

PERIOD 2—STUDY

Classes begin	Nov. 9
Thanksgiving (holiday)	Nov. 26-27
Christmas (holiday)	Dec. 24-27
New Year (holiday)	Dec. 31—Jan. 3, 1960
Classes end	Jan. 22, 1960

PERIOD 3—COOPERATIVE WORK

	1960
Work period begins	Jan. 25
Work period ends	Apr. 1

PERIOD 4—STUDY

Tuition due on or before	Apr. 4
Classes begin	Apr. 4
Good Friday (holiday)	Apr. 15
Classes end	June 10

* See Evening Credit program calendar for complete evening calendar.

The Daytime Cooperative Program

Staff Member in Charge: C. L. ROBERTSON

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Aims and Objectives

The College realizes that work experience is a vital part of the learning experience, and provides in its program an opportunity for the student to explore various job situations. When a student is put into a work situation he acquires knowledge that will supplement and complement his classroom learning. There is also the maturing influence of the opportunity to work with working people. As yet, there is no classroom substitute for the practical knowledge derived from experiences of the day-to-day problems on the job. The experience gained from the cooperative jobs—doing different types of work and discovering the working conditions on these jobs—assists the student in choosing a field for his life's work.

Through the College's experience in coordinating the work and study of student-employees in its evening credit program, it recognizes the desirability of developing young men and women who will enter business or industry with more than narrow technical skills. Many companies are looking for future leaders with a background broad enough to prepare them to cope with the increasingly complex economic and social problems of business today. The Cooperative Program of studies is designed to meet this need. Its curriculum provides subjects that develop the individual both intellectually and socially. It also provides the technical education necessary for entry jobs in business and industry.

The Cooperative Plan of the College recognizes the fact that many young men desire to spend their first two years of college at home and then go on to a senior college. Provision is made in the program for these students to gain fundamental preparation for later transfer to a senior college, or to continue in the Evening Credit Division of New Haven College.

Length of Program

It is a program offering alternate periods of study and work through two years. The operation of the Cooperative Plan provides that half of the student body is in college studying at one time while the other half is on a cooperative job in business or industry.

The year is divided into four ten-week periods. Half the student body studies in Periods One and Three and works in the other two periods. The other half of the student body studies in Periods Two and Four and works in the other two periods.

The Study Period

During the study period classes are held in the buildings of the College Woods Branch. Physical Education and recreational activities are scheduled at the Y.M.C.A. In order to permit as much freedom as possible in planning

their programs, students may select technical courses in the evening, from courses in business, engineering, and management. The evening courses meet from 7:00 to 9:45 p.m. in Yale buildings used by the College. It should be noted that evening courses meet continuously from September through June regardless of whether the cooperative period is a study or a work period.

The Work Period

Work Schedule — On the job, the work week will be determined by the individual company. Students are expected to conform to the same rules and regulations as the regular employees.

Cooperative Work Record — At the end of each work period the cooperating company furnishes a written evaluation of the student's performance on the job. This is used as an aid in future job placement and in counseling the student.

Admission Requirements

Because of the unique nature of the Cooperative Program, its admission requirements differ in certain respects from those of the Evening Credit Program. An applicant for the Cooperative Program:

1. Must be a high school graduate or have earned a State High School Diploma;
2. Must not have attended full-time college for more than one year prior to applying for the Cooperative Program;
3. Must not have had more than two years of full-time work experience;
4. Must meet the standards of the College in respect to high school average;
5. Must meet the standards of the College in respect to admission examinations;
6. Must be physically fit for undertaking both employment and study.

The College prescribes no set pattern of high school subjects as entrance requirements for this program.

An applicant for the Cooperative Program should be a graduate of a secondary school of approved standing and should present 15 acceptable units of secondary school work.

In general the applicant may be admitted on the basis of his secondary school record when it shows an average grade of "C" or better, when the secondary school subjects bear a reasonable relationship to the courses to be taken at the College, and when the applicant is recommended by his secondary school.

Admission Procedure

1. Call the College for information and, if possible, arrange for a pre-application interview. (SPruce 7-5513)
2. Complete an application for admission furnished by the Admissions Office which form contains:
   a. Personal information
   b. Secondary Education Form—to be mailed to student's high school for completion and for mailing to New Haven College.
3. An application fee of $5.00 must accompany the application. This fee is not refundable.
4. When all information has been received and the admissions tests completed, the applicant will be notified with regard to his admission.
5. When the student has been advised that the conditions for admission have been met, he should mail a tuition deposit in the amount of twenty-five dollars ($25.00) to be credited on his first term bill. This deposit is a reservation for a place in the class and cannot be refunded if the student fails to enter at the expected time.

Scholastic Regulations

Scholastic regulations, in general, will conform to those for other divisions of the College. For the Grading System in effect, refer to page 21.

Requirements for the Degree

The Associate of Science degree is granted upon:

1. Completion of the sixty semester hours of required study;
2. Completion of four work periods, and successful performance on cooperative job assignments;
3. Acquisition of a 2.0 average Quality Point Ratio;
4. Recommendation of the faculty.

(See page 24 for further details of graduation requirements.)

Securing Cooperative Employment

Placement of students in Cooperative work is accomplished through the joint efforts of the student and the College. In most cases the College will be able to refer the student to companies interested in employing Co-op students. When this is done, the employer will be notified and the student will receive information for making initial interview arrangements. The student is expected to report the results of the interview immediately to the College Coordinator. The referral does not mean that employment is secured or guaranteed by the College.

All Co-op students are expected to actively and earnestly seek employment through their own resources as well as those of the College. When a student locates a job in a company not already recognized by the College for Cooperative employment, the College reserves the right to approve the placement.

Cooperative Employment Rules

A Cooperative job involves a four-way relationship among the employer, the student, his alternate, and the College. Because the interests of other students, present and future, are often at stake, careful observance of the following rules is expected:

1. Cooperative students are required to obey all rules and regulations of the company for which they work and are subject to all labor conditions, including those pertaining to liability for accidents.
2. After placement has been made, students at school or work are not permitted to change groups, or leave their jobs without permission from the Coordinator.
3. Any serious misunderstanding, lay-off, or other employment or labor difficulty must be reported immediately to the Coordinator.
4. In case of sickness or other emergency requiring absence from work, the employer must be notified immediately. Should it appear that the absence will continue more than a day or two, the Coordinator should also be notified.
5. A student abandoning a job or so conducting himself on the job as to cause his discharge will be subject to suspension from the College for breach of discipline.

Tuition and Fees

THE DAYTIME COOPERATIVE PROGRAM

1959-1960

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Application Fee — The application fee is $5.00, payable only once, at time of initial application, and is not refundable.

Acceptance Fee — The acceptance fee is $25.00. It is payable when the applicant who has been accepted by the College acknowledges his acceptance and confirms his intention of undertaking the program. The fee is applied to tuition charges. It is not refundable.

Tuition — Tuition is $600.00 a year, payable in two payments of $300.00 each, as specified in the schedule below. The acceptance fee will be applied to the first tuition payment.

Schedule of Tuition Payment Dates

GROUP A:

$300.00—August 31, 1959

$300.00—January 25, 1960

GROUP B:

$300.00—September 12, 1959

$300.00—April 4, 1960

Student Activity Fee — The student activity fee is $5.00 per semester, payable with tuition.

Refunds — No refund of tuition payments will be made for withdrawal from either the work or study program, or for reductions in the study program.

Deferred Payments — In exceptional cases, arrangements for deferred payments may be made through the college office.

Program of Study

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Since the aim of the Cooperative Program is to prepare students to live a rich and satisfying life, a major part of which involves earning a living, the studies are built around a group of basic daytime courses, combined with *evening* electives according to the individual's vocational interests. A student may elect to pursue introductory courses in Business, in Management, or in Engineering. In order to allow flexibility in scheduling the courses, each student's program will be worked out in conference with his college advisor.

In addition to the sixty semester hours of credit necessary for a degree in the Cooperative Program, the student may elect, without additional charges, up to twelve semester hours of evening courses. This provision makes it possible for the student to obtain a wider background in his chosen field of study or to further explore any secondary interests he may have.

First Year

	First Ten-Week Study Period	*Sem. Hrs.*
E 112C	English Composition	3
E 114C	Speech	3
EC 133C	Economics	3
P 111C	Orientation	0
PE 111C	Physical Education	0
SS 115C	Sociology	3
*M 108C	General Mathematics (Op.)	3
**	Extra Evening Elective	3
		15—18

	Second Ten-Week Study Period	*Sem. Hrs.*
E 113C	English Composition	3
EC 201C	Economic History of U.S.	3
P 112C	Orientation	0
P 113C	Psychology	3
PE 112C	Physical Education	0
SS 116C	Sociology	3
*PH 101C	Elements of Physics (Op.)	3
**	Extra Evening Elective	3
		15—18

Second Year

	First Ten-Week Study Period	
E 220C	Technical Report Writing	3
E 202C	Humanities	3
IE 114C	Management Survey	3
PE 221C	Physical Education	0
SS 121C	Political Science	3
*A 111C	Intro. Accounting (Op.)	3
**	Extra Evening Elective	3
		15—18

	Second Ten-Week Study Period	
E 202C	Humanities	3
Phil 111C	Intro. to Problems of Phil.	3
SS 122C	Political Science	3
Zool 111C	Human Biology	3
PE 222C	Physical Education	0
*A 112C	Intro. Accounting (Op.)	3
**	Extra Evening Elective	3
		15—18

* Courses offered as elective courses in the daytime.

** Courses offered as elective courses in the evening. See course descriptions in the Evening Credit Program.

The student must carry fifteen credit hours per semester. A total of sixty semester hours of credit are required for the degree.

Description of Courses

in

THE DAYTIME COOPERATIVE PROGRAM OF THE JUNIOR COLLEGE

A 111C-112C. Introduction to Accounting. Credit, 3 semester hours.

See course description page 54.

E 112C-113C. English Composition. Credit, 6 semester hours.

This course is designed primarily to help students learn to write by writing—to develop the ability to organize thoughts quickly and effectively, to write with speed and facility, and to use simple written English. The course provides practice in applying these principles to the writing of letters, memos, reports, job descriptions, and other business papers.

Prerequisite: E A or satisfactory performance on English Placement Examination.

E 114C. Speech. Credit, 3 semester hours.

This course serves as an introduction to the principles of speech. The objectives are: to develop in the student proficiency in the use of vocal and bodily aids in various speaking situations, and to help the student gain confidence and fluency when speaking extemporaneously, as in group discussions, or in everyday conversation. Recordings are used for self-analysis and criticism.

E 220C. Technical Report Writing. Credit, 3 semester hours.

Prerequisite: E 113C.

Included in this course of writing is the study and analysis of professional scientific papers, the preparation of procedures and reports on the technical and semi-technical level, and an introduction to the principles of business letter writing.

E 201-202C. Humanities. Credit, 6 semester hours.

Prerequisite: E 113C.

An approach to man's perennial search to find meaning for his place in the universe and perspective for his systems of knowledge. Dealing with selected intellectual, ethical and aesthetic problems, the student is introduced to some classics in literature, history, philosophy and art which provide the foundations of contemporary culture. Extensive reading in primary sources is expected.

EC 113C. Economics. Credit, 3 semester hours.

The course aims at an understanding of the principles, institutions, and practices which form the basis of our economic system and activity. Such aspects of our economy as production, price, exchange, and distribution are considered. The course examines the basic economic aspects of capitalism and the other "isms." Opportunity is offered for the student to do independent work in the field of his own specialized interest.

EC 202C. Economic History of the U. S. Credit, 3 semester hours.

The development of American economic life in the various stages of agriculture, trade, industry, finance, and labor. The change of economic practices and institutions particularly in the realms of business, banking, and labor is stressed as well as the changing role of government.

IE 114C. Management Survey. Credit, 3 semester hours.

This is a fundamental course dealing with the history of business and industry; an appreciation of the functions and responsibility of business enterprise; some understanding of the variety of activities which go to make up our complete business system; the problems of men, materials and machines that are involved in the making and distribution of the product. The intent is to provide an understanding of our highly complex industrial and business organizations and how they fit into our economic activity.

M 108C. General Mathematics. Credit, 3 semester hours.

A general survey of the fundamentals of mathematics, including some concepts from trigonometry, coordinate geometry and elementary function theory. Application of these ideas is made in the fields of physical, biological, and social sciences.

P 111C-112C. Orientation. No credit. 1 hour per week. First year.

This is essentially a group guidance activity through which students are assisted in 1) making the most satisfactory adjustment to college life and study, and 2) establishing intelligent long-range vocational goals for themselves.

Satisfactory completion is required for graduation.

P 113C. Psychology. Credit, 3 semester hours.

This course is designed to give the student a general knowledge of the important principles of human behavior. Topics included are: motivation, emotion, learning, personality, intelligence, etc. The utilization of psychological knowledge in relation to everyday human activities is emphasized.

PE 111C-112C. Physical Education. No credit. 2 hours per week.

Varied physical training and recreational program including activities in the gym and swimming pool; games for fun and skill; training for the improvement of leisure sports; exercise; acquaintance with various sports and games requiring some proficiency. Satisfactory completion of this program is required for graduation.

PE 221C-222C. Physical Education (second year). No credit. 2 hours per week.

Satisfactory completion is required for graduation.

PH 101C. Elements of Physics. Credit, 3 semester hours.

Prerequisite: M 108C or equivalent.

A general course presenting selected topics from the traditional divisions and modern physics. While the course does not include formal laboratory experience, the scientific attitude is taught through a generous use of group demonstration laboratories.

SS 115C-116C. Sociology. Credit, 6 semester hours.

The aim of this course is to provide the student with an understanding and appreciation of the major institutions which form the structure of American society and their interaction upon each other. Particular attention is devoted to the impact of the dominant institution—our industrial capitalistic economy—upon all other aspects of our life—family structure, political organization, religion, etc. During the second semester opportunity is given to the student to explore in greater detail some phase of the subject which is of particular interest to him.

SS 121C-122C. Political Science. Credit, 6 semester hours.

This course deals with the structure and functions of the national government, party organization, national and state relations, and American politics as compared to other countries and the trends in modern politics.

Zool 111C. Human Biology. Credit, 3 semester hours.

An introductory course representing the important biological principles as they apply to man. A survey is made of the anatomy and physiology of the organ systems.

Course descriptions of elective courses in Engineering, Business Administration and Industrial Management will be found in section entitled "Description of Courses" in the Evening Credit Program section.

NEW HAVEN COLLEGE

The Daytime Engineering Program

OFFERING THE DEGREE ASSOCIATE IN SCIENCE

New Haven College, 1959-1960

Calendar

THE DAYTIME ENGINEERING PROGRAM

Fall Semester 1959

		1959
Placement Examinations:		
English examinations	Thursday, 7:00 p.m.	August 27
Psychological examination	Friday, 7:00 p.m.	August 28
Mathematics examination	Friday, 8:15 p.m.	August 28
Orientation	Tuesday	September 15
Tuition due	Tuesday	September 15
Classes begin	Wednesday	September 16
Thanksgiving (holiday)	Thursday and Friday	November 26-27
Christmas recess		December 19-January 3

		1960
Classes resume	Monday	January 4
Final examinations begin	Monday	January 18
Final examinations end	Friday	January 22
Recess		January 23-31

Spring Semester 1960

Classes begin	Monday	February 1
Tuition due	Monday	February 1
Washington's Birthday (holiday)	Monday	February 22
Good Friday (holiday)	Friday	April 15
Final examinations begin	Tuesday	May 31
Final examinations end	Friday	June 3
Commencement	Sunday	June 12

The Daytime Engineering, Science and Mathematics Program

Staff Member in Charge:

W. Robert Dresser, Chairman, Department of Engineering

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Aims and Objectives

The Daytime Program in Engineering, Science and Mathematics is designed to provide a typical two-year college program in these major fields. Men and women are provided the first two years of a standard four-year program while living at home, thus eliminating the on-campus expenses of room and board. Since New Haven College courses are accredited, the student will be in a position to transfer with advanced standing to other institutions. Upon completion of the seventy-two hours of credit in the two-year curriculum, a graduate will receive the Associate in Science degree. Students not intending to transfer will become qualified to enter industry for technical work and training, and to continue their advanced degree studies in the Evening Credit Division of the College.

Location

The two-year daytime program is operated at the College Woods Branch at 100 Cold Spring Street.

Admission Requirements

The following are the admission requirements to this program:

1. Graduation from an approved secondary school with a minimum of 15 units, among which are included:
   - 2 units—algebra
   - 1 unit—plane geometry
   - ½ unit—trigonometry
   - 1 unit—physics
   - 1 unit—a second science
2. Satisfactory placement in tests covering:
   - scholastic aptitude
   - mathematics
   - English

   given by:
   - the College Entrance Examination Board or
   - New Haven College
3. Personal interview

Admission Procedure

1. Call the College for information and, if possible, arrange for a pre-application interview. (SPruce 7-5513)
2. Complete an application for admission furnished by the Admissions Office which form contains:
   a. Personal information
   b. Secondary Education Form—to be mailed to student's high school for completion and for mailing to New Haven College.
3. An application fee of $5.00 must accompany the application. This fee is not refundable.
4. When all information has been received and the admissions tests completed, the applicant will be notified with regard to his admission.
5. When the student has been advised that the conditions for admission have been met, he should mail a tuition deposit in the amount of twenty-five dollars ($25.00) to be credited on his first term bill. This deposit is a reservation for a place in the class and cannot be refunded if the student fails to enter at the expected time.

Scholastic Regulations

Scholastic regulations, in general, will conform to those for other divisions of the College. For the Grading System in effect, refer to page 21.

Tuition and Fees

$5.00—Application Fee—to accompany the application (not refundable).

$25.00—Deposit—payable when notified of acceptance—credited to first semester tuition (not refundable).

$300.00—Tuition per semester—see calendar for payment dates.

$5.00—Student Activity Fee—per semester—payable with tuition.

$12.50—Laboratory and Breakage Fee—per semester for each science laboratory course—payable with tuition.

Program of Study

FIRST YEAR

Fall		Sem. Hrs.	Lab.	*Spring*		Sem. Hrs.	Lab.
CH 101d	Chemistry	4	3	CH 102d	Chemistry	4	3
D 101d	Engineering Drawing	3	5	D 102d	Drawing & Descriptive Geometry	3	5
EC 133d	Economics	3	0	EC 202d	Economic Hist. of U.S.	3	0
E 105d	English Composition	3	0	M 102d	Differential Calculus	3	0
E 107d	Speech	2	0	P 111d	Psychology	3	0
ENG 101d	Intro. to Engineering	0	1	PH 106d	Physics I—Mech.-Heat	3	0
M 101d	College Algebra	3	0	PE 112d	Physical Education II	0	0
PE 111d	Physical Education I	0	0				
		18	9			19	8

SECOND YEAR

E 118d	Modern Literature	3	0	E 206d	Comp. & Report Writing	3	0
EM 221d	Mechanics—Statics	3	0	EE 222d	Elements of Elec. Engr.	3	0
M 201d	Integral Calculus	3	0	EM 322d	Mechanics—Dynamics	3	0
PH 205d	Analytic Physics—Electrical	4	3	M 202d	Differential Equations	3	0
SS 214d	Political Science	3	0	PH 206d	Analytic Phys.—Atomic	4	3
		16	3	SS 215d	Sociology	3	0
						19	3

TOTAL—Associate in Science Degree: 72 semester hours.

Description of Courses

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CH 101-102d. General Chemistry. Credit, 8 semester hours.

An intensive treatment of inorganic and organic chemistry with some stress laid on industrial and engineering applications. Laboratory projects require proficiency in both qualitative and quantitative procedures.

Laboratory & Breakage Fee: $12.50 per semester

D 101d. Engineering Drawing. Credit, 3 semester hours.

(2 lecture hours, 4 laboratory hours)

This is an elementary course in engineering drawing designed to teach the use of instruments, the fundamental principles of projection, drafting room standards and conventions, lettering, selection and use of scales, orthographic projections, revolutions, developed surfaces, intersections and auxiliary views, and the making and dimensioning of complete working drawings of simple machine parts.

D 102d. Drawing and Descriptive Geometry. Credit, 3 semester hours.

(2 lecture hours, 4 laboratory hours)

Prerequisite: D 101d.

This course is a continuation of Engineering Drawing but includes the basic principles of space relationships with emphasis on the solution of engineering problems. Principal views; auxiliary views, oblique views, line and plane problems, revolution, surfaces and developments, surfaces and intersections, and warped surfaces are studied.

E 105d. English Composition. Credit, 3 semester hours.

A study of the mechanics of composition and accepted usage to develop effective self-expression; a study of words to enlarge and strengthen vocabulary; a study of selected literary forms to enhance the student's appreciation and understanding of them, and to lay the foundation for more extensive work in succeeding courses.

E 107d. Speech. Credit, 2 semester hours.

This course serves as an introduction to the principles of speech. The objectives are: to develop in the student proficiency in the use of vocal and bodily aids in various speaking situations, and to help the student gain confidence and fluency when speaking extemporaneously, as in group discussions, or in everyday conversation. Recordings are used for self-analysis and criticism.

E 118d. Modern Literature. Credit, 3 semester hours.

See course description page 61.

E 206d. Composition and Report Writing. Credit, 3 semester hours.

Prerequisite: E 105d.

The principles of structure and style as applied to both commercially and artistically significant prose are studied. A series of papers of gradually increasing complexity on themes determined by individual interests and objectives is undertaken including individual and group criticism and revision to meet high professional standards. Included in this course of writing for the engineering student is the study and analysis of the professional scientific paper, the preparation of procedures and reports on the technical and semi-technical level, and an introduction to the principles of business letter writing.

EC 133d. Economics. Credit, 3 semester hours.

See course description page 58.

EC 202d. Economic History of the United States. Credit, 3 semester hours.

Prerequisite: EC 133d.

See course description page 58.

ENG. 101. Introduction to Engineering. No credit. (one hour)

A survey to introduce the student to the broad concepts of engineering in several areas and to appraise both the human and technical aspects. Slide-rule instruction included. Required of all first-year engineering students.

EE 222d. Elements of Electrical Engineering. Credit, 3 semester hours.

See course description page 58.

EM 221d. Mechanics—Statics. Credit, 3 semester hours.

See course description page 61.

EM 322d. Mechanics—Dynamics. Credit, 3 semester hours.

See course description page 61.

M 101d. College Algebra and Calculus. Credit, 3 semester hours.

This course includes the fundamental relations in algebraic operations, analytic geometry, simultaneous equations, determinants, quadratic equations, complex quantities, partial fractions, inequalities, points, graphs, rectangular and polar coordinates, derivatives and antiderivatives.

M 102d. Differential Calculus. Credit, 3 semester hours.

Prerequisite: M 101d.

This course includes the fundamental notions of the calculus, differentiation and integration of algebraic functions, differentials, maxima and minima. Applications are made to simple problems in geometry and mechanics, such as the determination of velocity, accelerations, areas, volumes, and pressures. The analytic geometry of the straight line and of the conic sections is introduced as an attribute to the calculus.

M 201d. Integral Calculus. Credit, 3 semester hours.

Prerequisite: M 102d.

This course includes integration, geometrical applications to lengths of plane curves, areas, volumes of solids; mechanical applications to work, presure, centers of gravity, and moments of inertia; analytical geometry of three dimensions; double and triple integration with application to areas, volume, moments of inertia, parametric equations and centers of gravity.

M 202d. Differential Equations. Credit, 3 semester hours.

Prerequisite: M 201d.

This course includes Infinite series; Fourier series; partial differentiation; and line integrals. The solution of ordinary differential equations including the principal types of first and second-order equations, simultaneous equations, and linear equations with constant coefficients, and the introduction to operational methods by means of the Laplace transformation.

P 111d. Psychology. Credit, 3 semester hours.

See course description page 67.

PE 111-112d. Physical Education. No credit.
See course description page 78.

PH 106d. Physics I. Credit, 3 semester hours.
Analytical Physics I: Mechanics and Heat, Statics, kinematics; Newton's laws; work, energy and power; conservation of momentum; circular motion; rotational dynamics; heat and energy; kinetic theory.

PH 205d. Physics II, (with laboratory). Credit, 4 semester hours.
Analytical Physics II. Electricity and Magnetism. Electrostatics; direct currents; magnetic effect of a current; electrical instruments; induced emf; inductance and capacitance; simple harmonic motion; physical basis for a-c circuits and basic electronics are studied.

PH 206d. Physics III (with laboratory). Credit, 4 semester hours.
Analytical Physics III: Sound, Light, and Atomic Physics. Fundamentals of wave motion; sound; geometrical optics; physical optics; radiation; relativistic mass-energy; electrons, photons and their interactions; atomic structure; nuclear structure and reactions are studied.

SS 214d. Political Science. Credit, 3 semester hours.
This course deals with the structure and functions of the national government, party organization, national and state relations, and American politics as compared to other countries and the trends in modern politics.

SS 215d. Sociology. Credit, 3 semester hours.
In this course the student studies the role of culture in society; the person and personality; groups and group behavior; institutions; social interaction and social change.

The College-Industry Engineering Programs

One example of industrial-educational cooperation is the program of study under which New Haven College and the Winchester-Western Division of the Olin Mathieson Chemical Corporation have joined forces in the training of engineering aides in production engineering.

The program gives qualified employees of the chemical company three years of on-the-job training, leading to fifty-six semester hours credit. The underlying purpose of this program is to train engineering aides in order to relieve graduate engineers from routine operations. Since the outside recruitment of competent engineering aides has become almost an impossibility, the Company and the College are both optimistic that this three-year curriculum will provide a partial solution to the engineering shortage in this particular situation.

A second program is the Pratt-Read Electrical Engineering Program in which the College and students from the Pratt, Read & Co., Inc. and other companies have joined in the training of electrical engineering aides. This program is an off-campus or extension program with classes being held twice weekly in the afternoon at Valley Regional High School in Essex.

These programs are entirely company financed. Candidates must qualify by passing the New Haven College entrance examinations after being approved through testing and interviewing by a screening committee from the company. Class schedules vary with the program. In the case of the Olin Mathieson program, those who are accepted attend classes three days a week from 3:30 to 6:00 p.m. for eight 15-week semesters. They remain on their present jobs for the first semester at which point they transfer to engineering departments for on-the-job trainee assignments during the remainder of the program.

THE DIVISION

of

SPECIAL STUDIES

New Haven College, 1959-1960

The Division of Special Studies

Staff Member in Charge: VIRGINIA M. PARKER

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Aims

The special courses are designed to provide non-credit studies of general interest to adults of the community and to meet specific training needs of industrial personnel. Because these courses have arisen to fill needs in the New Haven area, it is anticipated that new courses will be added to the curriculum of this division as the needs are recognized and as the course materials are developed. These courses are of particular interest to adults who wish to take certain courses without pursuing a full academic program.

Schedule of Hours

All classes meet from 7:15 p.m. to 9:30 p.m., and each course meets one night per week unless otherwise noted. Courses vary in length from six sessions to seventeen sessions. A complete schedule is issued in August and January.

Admission Requirements

For certain courses the only requirement for admission is the interest of the applicant. For other courses, the applicant's present position and experience are the primary factors considered in admission.

The College will be pleased to mail out special bulletins which describe individual courses.

Registration Procedure

Registration may be accomplished by mail or in person. Interested persons should request a special course application card. Receipt of the card plus tuition fee by the College constitutes formal class enrollment.

Registration may sometimes be insufficient to justify a class in certain courses scheduled to be offered. In such cases, the College reserves the right to cancel the course, with a full refund of tuition paid to the applicants or their companies.

Tuition will be refunded only if the above situation occurs or if tuition is received after the class quota for enrollment has been filled.

Certificate Requirements

A notice indicating successful completion of a course is mailed to each registrant. A duplicate of this is mailed to the registrant's company upon request. Information is given on title, length of course and number of sessions which registrant has attended.

A special certificate indicating successful completion of the course is available also if the student desires one. Successful completion indicates that the student has attended classes for at least three-fourths of the class sessions and has been an active class participant, with the latter being verified by the class instructor.

COURSES OF STUDY

The following are typical of the types of courses offered in the Division of Special Studies. Descriptive sheets on each course giving price, length of course, and other pertinent information will be mailed upon request.

SP 1. Ways of Looking at Art

The purpose of this course is to increase the understanding and enjoyment of widely differing styles of painting, sculpture and architecture through a study of changing methods and aims in art, to teach the student what to look for in the work of art, and to develop his own judgment and appreciation.

The course consists of slide lectures, discussions and visits to the Yale Art Gallery, with emphasis on the visual experience rather than the historical approach. Mimeographed materials are furnished class members. No formal background in art or art history is needed. Course consists of fifteen weekly sessions, under the direction of Miss A. Elizabeth Chase, Docent of the Yale Art Gallery.

SP 4. Creative Thinking ("Brainstorming")

This is a course designed (1) to make the individual aware of the importance of creative effort, (2) to demonstrate through discussion and participation just how each individual is capable of producing more and better ideas for solving personal and business problems, (3) to create an atmosphere conducive to the acceptance and development of creative ideas. The course content includes such topics as: the importance of creativity, ways to develop creativity, deterrents to creativity, processes of ideation, stimulants to creative thought, and brainstorming. Following brief and informal presentations by the instructor, all students are encouraged and guided into discussion techniques, brainstorming, and self-interrogation. Course consists of six weekly sessions of two hours duration each.

SP 8. Creative Writing Workshop

A seminar for students who are interested in improving their style of writing, whether they are beginners or professionals, by a study of techniques and methods and by self-criticism. Students may submit material in any form—short story, essay, poetry, drama, biography—to be read to the class and criticized by both class and instructor. Special projects in creative writing may also be carried out by individual students with the instructor's approval. The standard aimed at is professional. Open to all interested persons. Course consists of fifteen weekly sessions.

SP 9. Advanced Fiction Workshop

This is an intensive writing class designed for those persons who may be considered "near professional" in a fiction way; or for professional newswriters, scriptwriters and others who have a proficiency with words and an ambition to achieve publication in the short story, play, or novel field. Class will attempt to carry along a growing awareness of what other writers have done with the short story, through reading 30 short stories. Class discussions will center mainly around intellectual questions which have attracted creative persons for centuries, and around specific problems individual writers are meeting in their struggle to improve their own writing. Class meets twice a week for 30 sessions.

SP 11. Public Speaking for Business

The purpose of this twelve-week course is to develop clear, logical thinking in any speaking situation, to learn specific techniques for overcoming "stagefright", and to learn how to organize speech material for any given situation. Extemporaneous speaking, the conducting of business meetings, and special work on securing audience attention will be taken up in this practical course.

SP 14. Graphic Arts and Design

This course is designed for industrial editors, advertising personnel, printing designers, printing craftsmen and others concerned with the design of printed material.

Classes are held in the graphic arts laboratory on the ground floor of the Yale Art Gallery in the School of Architecture and Design.

Emphasis of the course is placed on good design—how to express type and photographic material in the most effective and attractive manner. However, other subjects related to graphic arts will be examined including paper, color, control of printing costs, when to use what process, styles of type, and fitting copy into fixed spaces.

The "case method" of teaching is used in this course. Students face such problems as designing the cover and inside pages of a brochure, laying out a newspaper advertisement with copy supplied, designing a letterhead, fitting type within fixed spaces, and preparing both type and photographic layouts. Each of the problems in the twelve-session course has been designed to illustrate basic graphic arts principles.

Students, using copy and photographic material, work out solutions to problems in class after which the instructor summarizes design and graphic arts principles, using class work for illustrations.

SP 20. Technical Writing Workshop

This course covers the general ground rules for good technical report writing. A considerable portion of class time is devoted to actual preparation of an inter-office technical memo, a technical report and a handbook. Particular emphasis is placed upon organization and readability of material, good rhetoric and selection of style. A review of the more common errors and pitfalls found in technical writing is given. Basic material for the writing projects is distributed to the class. The course is held for ten weekly sessions.

SP 25. Professional Engineers Examination Refresher

Intended to be a refresher course with the primary purpose of preparing for the Engineering Fundamentals section of the Professional Engineers examination. Use of past examinations and the working of problems therein is a major part of the instruction in this fifteen week course. Admission is open to those who wish to take the Professional Engineers Examination and believe themselves qualified.

SP 41. Personnel Interviewing

This twelve-week course is designed both as a refresher for the professional personnel man and for any administrator or prospective administrator desiring to avail himself of interviewing as an effective tool in his work. The interviewer and his work, interviewing techniques, and types of interviews are some of the areas which will be covered in this survey course.

SP 43. Supervision IA—Relations Between Supervisor and Employees

This is an introductory course in the basic principles of human relations and deals with such topics as: What human relations is, current problems of human relations and how they come about, cause-result approach to behavior, the individual and the group, reactions to frustration and the blocking of motives. Types, functions, and principles of interviewing are included. The class has six weekly sessions.

SP 44. Supervision IB—Situations in Human Relations

Building on the principles of Supervision IA, this course focuses upon the *application* of the basic principles of human relations to common, everyday situations encountered on the job. Through practice in the analysis of typical situations, participants get an orderly approach to the solution of human relations problems. The class meets for six weekly sessions.

SP 50. Transistor Electronics

The purpose of this fifteen-week course is to provide interested engineers or physicists with a basic understanding of the transistor and the knowledge required for transistor circuit design. The course covers the elements of semiconductor theory, diode and transistor design, multiple element transistors and engineering applications, including amplifiers, oscillators and switching circuits for electronic computers and telephone dialing. It is designed for practicing engineers, equipment designers who are confronted with the problems involving diodes and transistors and should also be of interest to college seniors in physics or engineering who are interested in understanding the functioning of the transistor.

Applicants for admission should have two years of college work in engineering mathematics or physics. In some instances persons interested in taking the course may have a strong work background in the field though they may lack the formal prerequisites. This may be discussed with the instructor.

SP 55. Theory of Automatic Feedback Control Systems (Servomechanisms I and II)

The course starts with a review of the applicable theoretical background. The analysis of electric and mechanical systems is simplified by the introduction of the LaPlace transform method. The analysis of the system from the stability point of view is considered. The Nyquist criteria and the criteria of Routh, Hurwitz, and Leonhard are studied. The problem of synthesis of an equalizing network for the system which will allow it to meet given accuracy and stability specifications are considered in detail. Both series and minor loop techniques are considered. Load disturbances and noise problems are covered. The course concludes with advanced topics as time permits. Admission presupposes at least one year of successful study in an accredited college, including college-level physics and mathematics through differential and integral calculus.

There are two fifteen-week sections in this course. Servomechanisms I and II. Entrance to Servomechanisms II may be gained only after taking Servomechanisms I or after discussion with the instructor indicates that the person's work experience and general background qualify him for admission.

SP 57. Servomechanisms Components I and II

The object of this course is to establish the transfer function for the elements and establish the characteristics important in control system design. The course will consider the various components used in control systems from the system point of view considering the electric, mechanical pneumatic and hydraulic elements. Admission presupposes that the applicant has taken the prerequisite course in Servomechanisms Theory, such as Servomechanisms I; otherwise permission of the instructor is required.

There are two fifteen-week sections in this course, Servomechanisms Components I and II.

SP 65. Fundamentals of Electroplating

The course presents a broad survey of modern electroplating theory and practice, assumes no previous knowledge of electroplating. Electrochemical theory, electricity, plating solution operations analysis on an elementary level are covered. Fifteen weekly sessions are held.

SP 66. Chemistry for Electroplating

This fifteen-week course aims to facilitate the training of personnel engaged in plating by supplementing practical plating experience with an understanding of electroplating practice. It is designed to meet the needs of plating room personnel up to and including the plating foreman. The purpose of this course is to give the student a knowledge of the chemical reactions which take place in the common plating solutions, and to give some insight into the chemical nature of the metals and reagents encountered in the plating industry.

SP 67. Electroplating Solutions

This course has been developed to facilitate the training of personnel in plating by supplementing practical plating experience with an understanding of the theory involved. Applicant should have previously taken *Chemistry for Electroplating* or have had a year of college level chemistry for entrance to this fifteen-week course.

SP 68. Electroplating Practice

This course is designed to give the plater a broader knowledge of modern electroplating methods with emphasis on the physical equipment used in the shop and on processes other than the electroplating process.

SP 75. Engineering Drawing

The course is designed for the apprentice draftsman and trainee and assumes no prior knowledge of drawing. The work is designed to teach the use of instruments, the fundamental principles of projection, drafting room standards and conventions, lettering, selection and use of scales, orthographic projections, revolutions, developed surfaces, intersec-

tions and auxiliary views, and the making and dimensioning of complete working drawings of simple machine parts. Class meets one night per week for sixteen weeks.

SP 76. Descriptive Geometry

This course is offered with the purpose of training those with an adequate drafting background in the principles of descriptive geometry and its application in the design and layout of industrial products. Course covers the representation of objects by means of a system of related views with graphical methods of determination of true shapes of lines and planes and the clearances or true angles between them, piercing point and perpendicular relationships, intersections and developments of plane and curved surfaces. It is assumed that those wishing to register for the course already have an adequate drafting background or have taken college *Engineering Drawing*. Class meets one night per week for sixteen weeks.

SP 80. Statistics for Management

This course is designed to provide an understanding of scientific sampling and to develop some competence in the use of elementary sampling techniques. An introduction is given to procedures for interpreting results of simple experiments as to whether such results are significantly different. Control charts are explained as an alternative approach suitable for many data handling problems. Class meets weekly for ten weeks.

SP 85. Programming for Punched Card Accounting

The purpose of this twelve-week course is to teach the basic principles of punched card accounting with particular attention being given to the latest developments in programming of a computer type machine. Payroll, billing and accounts receivable, inventory, sales analysis, production control and budgetary control are covered.

SP 86. Elementary Data Processing

This fifteen-week course is an introduction to the basic theories of Punched Card Accounting and the operating features of the equipment. It also surveys some of the accounting functions capable of being automated. Regular class work is supplemented by seminars conducted by representatives from business and industrial organizations which utilize punched card accounting methods.

SP 87. Advanced Data Processing (Programming for a Business Computer)

This fifteen-week course is an introduction to the new field of business computers and is designed to give a broad view of magnetic storage machines and the stored program concept. Class will study operational features of a number of types and laboratory work in programming and program testing will be performed on a late model, medium size business computer.

SP 110. Time Study I—Making the Time Study

Introduction to time study, making the stop watch study, element breakdown, continuous and snap back studies, non-cyclical elements, foreign elements, summarizing studies, slide rule practice, pro-rating time values, what to include in the cycle time and what to include as an allowance, the effect of allowances on the cycle time, how the calculations are made.

SP 112. Time Study II—Leveling or Performance Rating

Introduction to leveling, common types of rating scales, factory operations brought to class, time studies rated, results checked against actual cycle time. Four practice sessions.

SP 113. Time Study III—Down Time Study and Group Study

General approach to down time studies, activity of man and machine charts, introduction to ratio delay time study, analysis and discussion of man-machine studies brought in by class, case examples of group time study, analysis and discussion of group time study brought in by class.

SP 114. Time Study IV—Methods

Introduction to flow process chart, introduction to principles of motion economy and work place layout, problems in work place lay-out brought in by students, introduction to right and left hand charts, practice in time study comparison of variations of assembly operation methods, micromotion study.

SP 125. Elemental Time Standards

The course discusses the origin of this work measurement system and its various industrial applications. Detailed consideration is given to all types of manual motions as to their identification, classification and time factor. The principles of limiting and combining motions with group practice in recording and combining simultaneous motions of the arms, hands, and other parts of the body is explained. As class progresses, students bring in selected assemblies to which the rules that apply to identifying and classifying all of the various motions found in the course of manual work are applied. Class meets one night per week for fifteen weeks.

SP 130. Methods—Time Measurement

This fifteen-week course will be of particular interest to industrial engineers, methods engineers, time study engineers and members of production supervision and management interest in the potential of M-T M as a practical tool for work measurement and methods analysis. The first ten meetings are devoted to a discussion of the basic hand and body motions with emphasis on the purpose, type and breakoff point of each. The course covers the principles of limiting and simultaneous motions and the observation and recording of these motions. The practical use of M-T M for estimating standards from drawing and samples and its effect on plant layout and production planning is indicated.

SP 138. Quality Control

This twelve session course is designed to acquaint the student with modern methods used by industry in order to achieve quality of their products. Topics discussed will be: preventing defects, organizing for quality, locating chronic sources of trouble, coordinating specifications, manufacturing, and inspection. The use of control charts and the selection of modern sampling plans will also be given attention during the course.

Package Design

SP 139. Modern Package Design and Materials.

This twelve session course emphasizes the importance of package design in merchandising and reviews some of the current practices in the field of design and materials. Folding box manufacture is emphasized; attention is also focused upon the use of acetate films, polymeric materials, glass, and metal foil. Use of color, art work, layout and design, along with economy in packaging discussed. Of interest especially to package design engineers and assistants, advertising, merchandising and sales personnel.

Production Control

The following series of production control courses has been developed to train all levels of employees. Basic Production Control is designed for the trainee and low-level production control employee and as an appreciation course for foremen and supervisors. Advanced Production Control covers intensively major problems involved in all phases of production control and is intended exclusively for persons engaged in production control work or who are preparing to enter production control. Control Systems Analysis is intended for those who have been working in production control for some time and affords the opportunity of analyzing five typical systems in operation.

SP 140. Basic Production Control

Presents important elements of production control such as introduction, planning, materials handling, routing, scheduling, dispatching and follow-up. Material covers the overall functions of production control and their relationships. Class meets one night per week for six weeks.

SP 141. Advanced Production Control

Part I pursues intensively major problems involved in production planning, routing, scheduling, and machine loading. Part II pursues intensively major problems involved in dispatching and follow-up. This is a 12-session course.

SP 142. Production Control Systems Analysis

This course assumes a comprehensive knowledge of the principles of production control and comprises an analysis of actual systems in operation. The course alternates with five plant visits and class discussions thereof. The plants visited may vary but they are chosen with the view of furnishing the participant a good cross-section of types of production control systems in operation in New Haven and vicinity. There are twelve sessions.

SP 150. Fundamentals of Inventory Management

This course is designed for the serious management student and for those persons whose duties involve the creation or acquisition of inventory. It is a nontechnical course which is divided into two parts. The first part covers the principles of inventory management, including an analysis of industrial inventories, economic ordering quantities, statistical reordering points, inventory carrying costs and techniques for controlling inventory. The second section covers systems and records for inventory control. The course consists of twelve weekly sessions.

SP 160. Simplification of Office Procedures

This twelve-week course is designed to demonstrate the possibilities that exist in every office for simplification of methods and reduction of clerical costs through the application of the basic techniques and methods of work simplification and scientific management. The purpose of the course is to show how to make profitable changes in office procedures and forms and how to develop and install supervisory tools and techniques. This is a practical approach rather than an academic one.

SP 165. General Freight Traffic Management

A course for the training of traffic managers offered in two parts, each seventeen weeks in length. Emphasis is placed on the use of actual tariffs in class activity.

SP 168. Motor Freight Traffic

A comprehensive course giving actual training in motor carrier traffic management fundamentals, including detailed study of motor carrier rates, classifications and tariffs together with rate-making procedures. Emphasis is on tariffs used by the motor carrier industry in New England. It is preferable that those interested in Motor Freight Traffic be engaged in transportation while taking the course. Course offered in two 17-week parts with Part I a prerequisite to Part II except by permission of instructor to persons with suitable traffic experience.

THE SCHOOL

of

EXECUTIVE DEVELOPMENT

New Haven College, 1959-1960

The School of Executive Development

Staff Member in Charge: LAWRENCE C. PARKER

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The School of Executive Development is a four-year training program to supplement the work experience of eligible managerial employees and to develop skills essential to executive action in firms of the New Haven area.

Origin and Purpose

The School of Executive Development at New Haven College originated in company requests, received over a period of several years, for a program of management studies for junior and middle level executives. With valuable assistance from educators and industrialists of Worcester, Mass., where a similar program has operated successfully at Worcester Polytechnic Institute, the College developed suggested instructional materials for a four-year program. This material was discussed with an advisory committee of industrial training directors and at a meeting of 34 executives. Both groups expressed a need for the program, and the first class of 25 was started in January, 1953. Since that date, more than 250 men from over 40 companies have been admitted to the program which has been enthusiastically received by business and industry in Central Connecticut.

This program brings together, for management studies under capable leadership, men from various companies and institutions who have positions between the levels of departmental foremen and top management, or men who are next in line and are being prepared for departmental responsibility. These are in such departments as production, cost control, quality control, sales, methods, purchasing, industrial relations, engineering and accounting. The men, through working together, learn from each other and are stimulated to keep on learning. From their studies they are able to obtain meaning which was impossible for them to recognize in earlier schooling. Furthermore, previous learning is refreshed at a time when the men are ready to use it.

Schedule of Hours

Classes are scheduled one day a week from 4:00 to 6:00 p.m.

Classes meet from September to May with customary school holidays observed.

Admission Requirements

Prospective enrolees in the program are nominated by the company and are admitted following approval by the College.

Membership is limited to 28 in each year's class. To be eligible to participate, a person must satisfy the following conditions:

1. He must be a mature individual with experience in business or industry appropriate to the aims of the program.
2. His level of employment should be assistant department head or higher.
3. He must be nominated by his company, approved by the College, and show evidence of a desire to participate.
4. He must show a likelihood of completing the four-year program.
5. His job schedule must permit regular attendance.

One to four participants from a company may be enrolled in any one beginning class, which then meets on the regular schedule over the four-year period.

Organization of the Program

The executive development program is guided by an 11-man advisory committee of executives from New Haven area business and industry. This committee reviews all development work and assists in the general operation of the School.

Each class in the School elects its own steering committee to represent the participants in assisting the college with evaluation of content and procedures and in the organization of social activities and special projects.

Tuition

The annual charge is $175.00 per man per year except for companies which have formal training agreements with the College, in which case the tuition is $125.00 per man per year. This fee includes tuition, books and supplies and all other course expense.

Application

Preference for enrollment in a new class is given to companies currently participating providing that reservations are known to the College by mid-April, with final applications submitted not later than mid-May.

Applications from new companies must be submitted by mid-May and will be considered in order of application as the class quota permits.

Courses of Study

First Year

Effective Self-Expression is a course in speech, conference training, and committee participation. It is speech studied in terms of expressing oneself in everyday situations to meet ordinary business needs.

Speed Reading improves reading speed and comprehension, helps adjust reading to differing conditions and purposes, and develop skill in reading technical and business material.

SECOND YEAR

Human Relations in Industry affords an examination of a series of inter-personal situations to bring out the factors involved, and to illustrate effective techniques which were, or might have been, utilized in each case.

Economics is a study of several of the pressing national and international problems facing our economy, such as rapid growth, inflation, taxes, national debt, rearmament, the inter-nation challenge of socialism and communism, and aid to other countries.

THIRD YEAR

Economics of the Firm examines the problems of the firm and the national economy and studies the functions of management, the corporate structure, types of business, organization, and such problems as the use of patents, the relation of the firm to the community, and certain effects of government regulations.

Production Management traces the problem from product design, plant layout, and work flow to methods improvement, and finally to scheduling and control.

Buying and Selling Practices provides an insight into the marketing and procurement problems of the firm as they relate to production.

FOURTH YEAR

Personnel Administration affords an opportunity to study problems of manpower management, including federal and state regulation of employment practices, medical and personal services, and the implications of a contractual relationship with the workers.

Policy Formulation and Administration examines problems of policy writing and affords the student a review of the materials studied throughout the entire program.

School of Executive Development Advisory Committee

A. C. Gilbert, Jr., *Chairman,* President, The A. C. Gilbert Company, New Haven, Connecticut

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Frederick T. Backstrom, President, First Federal Savings and Loan Association of New Haven, New Haven, Connecticut

William J. Cooper, President, The United Illuminating Company, New Haven, Connecticut

John A. Dickie, President, Unholtz-Dickie Corporation, Hamden, Connecticut

John J. Grimes, Jr., Superintendent, New Haven Works, American Steel and Wire Co., Division of the United States Steel Corporation, New Haven, Connecticut

W. Miller Hurley, Vice President and General Manager, Winchester-Western Division, Olin Mathieson Chemical Corporation, New Haven, Connecticut

Harold F. Kneen, President, Safety Industries, Inc., New Haven, Connecticut

Gen Mastrogiovanni, Employment Training and Public Relations Director, B. F. Goodrich Sponge Products Division, Shelton, Connecticut

Ellis C. Maxcy, Administrative Vice President, The Southern New England Telephone Company, New Haven, Connecticut

Joseph S. Miller, President, The New Haven Board and Carton Company, New Haven, Connecticut

William B. Williams, Secretary and Treasurer, Acme Wire Company, New Haven, Connecticut

THE
READING CENTER

New Haven College, 1959-1960

READING CENTER PROGRAM

Staff Member in Charge: JOSEPH J. ARNOLD

Aims and Objectives

Of great significance today is the fact that a large number of secondary and college students are seriously deficient in many aspects of reading. This deficiency is equally significant in the adult world where the demands of an increasingly complex society require a greater amount of reading.

It is then the aim of the New Haven College Reading Center to offer a varied program of reading techniques and study skills to fit the specific needs of students and adults. The program is designed, for the present, for classroom group teaching techniques on the secondary, college, and adult levels. In the near future, plans call for an extension of the program to include small group and individual tutoring for students of all age and accomplishment levels.

Admission of Students

Since Reading Center courses do not carry college credit, admission is open to those whose test results, as well as the personal interview, indicate that they will profit from the instruction.

Those interested in seeking admission should apply in person. Registration information will be mailed on request. Enrollment is in the order in which registrations are received.

Testing Program

Tests are a prerequisite to admittance. Although the written tests will vary with the level of the group, they are designed to measure such basic phases of reading as speed, comprehension, vocabulary, concentration, and retention.

Wherever feasible, correlated testing is administered at the end of each course to determine the level of accomplishment in each reading area.

Tuition Charges, Payments and Refunds

Tuition for all courses is $60.00. This charge includes all testing fees. A complete refund of tuition will be made, except for the initial testing fee of $3.00, to those students not accepted.

Course Descriptions

Reading I—Development Reading and Study Skills—Secondary Level

This course is designed specifically for the secondary school student. Besides the usual improvement in better and faster reading, much emphasis is placed on developing proficiency in the organizational techniques of scheduling and timing and on the study skills of finding and organizing information. The techniques of taking examinations are also offered.

Reading II—Reading Laboratory

This course is designed to meet the reading and study skills needs of the entering college freshman, particularly those students whose college entrance examinations are low in this field. Development of reading speed and comprehension to meet the demands of the college reading level is stressed. Emphasis is also placed on the organizational and study skills of Survey Q 3 R techniques of outlining, skimming and scanning, vocabulary building and concentration. Special effort is made to improve concept building and critical interpretation.

Reading III—Adult Reading Efficiency—Primary.

This course is for the adult who wishes to develop his reading speed and comprehension to his true potential. This course provides training in the ability to retain what has been read, to find the central idea and subordinate details, to make deductions, to evaluate evidence as well as other factors of the critical attitude necessary for mature interpretation.

Reading IV—Adult Reading Efficiency—Advanced.

This course is a continuation of Reading III in which the integrated program of increased reading speed and comprehension is further refined.

Texts

Correlated texts are used with all the courses. The material varies with each course. The materials used in Reading I, for example, are designed so that the student keeps the texts as a permanent record and a source of review. In such an instance the student is expected to pay for the texts.

Equipment

The tachistoscope (flashmeter), the controlled reader, the pacer and the film series are all used in varying degrees in each course.

Schedule of Sessions and Hours

All courses are offered in 15 sessions. Each session is two hours in length.

During the school year Reading II, III and IV meet once a week from 7:00 to 9:00 p.m. and are scheduled from Mondays through Fridays. Reading I meets Saturday mornings from 9:30 to 11:30.

During the summer session classes meet twice a week at 9:30 a.m. from Monday to Friday for six weeks to begin in mid-June. The additional sessions are scheduled at the first and last weeks and are devoted primarily to the testing program.

NEW HAVEN COLLEGE

FACULTY

New Haven College, 1958-1959

NEW HAVEN COLLEGE FACULTY

Evening Credit Program

1958-1959

ANDERSEN, CARL W. — *Sociology*
A.B., University of North Carolina; M.A., Columbia University
Housing Manager, Housing Authority of City of New Haven

ANDERSON, LORNA B. — *English*
B.A., Mount Holyoke College; M.A.T., Yale University

ARNOLD, JOSEPH J. — *Industrial Engineering*
B.S., New Haven State Teachers College
Assistant Chairman, Industrial Engineering, New Haven College

BENNETT, STEPHEN J. — *Humanities—Literature*
B.S., M.A., Columbia University
Chairman, English and Humanities, New Haven College

BERNEY, CHARLOTTE — *English*
B.A., Wellesley College; M.A., University of Michigan

BOWDEN, CARLETON L. — *Mathematics*
B.E., Yale University — *Mechanics*
Process Engineer, Pratt & Whitney Aircraft

BOYD, ROGER W. — *Engineering Drawing*
B.S., Yale University
Power Engineer, The United Illuminating Company

BREESE, JAMES L. — *Tool Design*
Rhode Island School of Design, Brown University
Plant Engineer, The Henry G. Thompson & Son Co.

BROUWER, FREDERICK E. — *English*
B.A., Calvin College, Grand Rapids
M.A., University of Michigan

BURR, MALCOLM — *Metallurgical Engineering*
B.S., Yale University

BYRNE, JOHN J. — *Electrical Engineering*
B.E.E., Manhattan College; M.Eng., Yale University
Electrical Engineering, Yale University

CASEY, EVELYN — *English*
A.B., Hunter College, M.A., Cornell University
Home Decorators, Inc.

CAYLEY, PAUL W. *Mathematics*
B.E., M. Eng., Yale University
Electrical Engineering, Yale University

CHANIN, ROBERT *Psychology*
B.A., Brooklyn College
Law School, Yale University

COHEN, SIDNEY R. *Electrical Engineering*
B.A., B.S.E., M.S., University of Connecticut
Project Engineer, MB Manufacturing Co.

COLTON, GEORGE W. *Mechanical Engineering*
Ph.B., Sheffield Scientific, Yale University
Consulting Engineer

CORR, FRANCIS P. *Mathematics*
B.E.E., Manhattan College; M. Eng., Yale University
Electrical Engineering, Yale University

DAVIS, CALVIN *Nuclear Metallurgy*
B.S., College of the City of New York
M.A., Polytechnic Institute of Brooklyn
Process Engineer Superintendent, Olin Mathieson Chemical Corp.

DUDLEY, EDWIN A. *Mathematics*
B.A., Wesleyan University; M.A., Yale University
Instructor of Mathematics, North Haven High School

FISCHER, FREDERICK F. *Accounting*
B.C.A., Northeastern University
Certified Public Accountant, Connecticut
Secretary, State Society of Certified Public Accountants;
Frederick Fischer, C.P.A.

FISCHER, FREDERICK G. *Accounting*
B.S. in Economics, University of Pennsylvania
Certified Public Accountant, Connecticut
Ernst & Ernst, Manager

FISCHER, LEWIS C. *Accounting*
B.S., University of Pennsylvania
Ernst & Ernst

FITZGERALD, WILLIAM J. *Mechanical Processing*
A.S., New Haven College
Mechanical Engineer, J-B-T Instruments, Inc.

FOLEY, ROBERT J. *Economics*
A.B., Fairfield University; A.M., New York University
Assistant to Chairman, Business Administration, New Haven College

FRICKENHAUS, ROLAND — *Accounting*
A.S. in Accounting, New Haven College
Certified Public Accountant, Connecticut

GAGLIARDI, ROBERT M. — *Mathematics*
B.S. in Elec. Engineering, University of Connecticut
M. Eng., Yale University

GILMAN, LEIGHTON C. — *Public Relations*
B.A. Government, University of New Hampshire
Public Relations, Southern New England Telephone Company

GOODE, JOHN F., JR. — *Mathematics*
B.E., Yale University
Production Engineer, Pratt & Whitney Aircraft

HARMAN, HENRY M., JR. — *Business Finance*
B.S., Lehigh University; M.A., University of Tulsa
Controller, Connecticut Hard Rubber Company

HEALEY, ARTHUR H. — *Law*
B.B., Trinity College; LL.B., Harvard Law School
Attorney-at-Law

HEATH, JOHN M. — *Mathematics*
B.A., Wesleyan University; M.A., Yale University
Head of Mathematics Department, Hopkins Grammar School

HORWITZ, DONALD P. — *Accounting*
B.S., Northwestern University; C.P.A., Illinois
Law School, Yale University

HUNT, LEIGH W. — *Engineering Drawing*
Former Assistant Chief Draftsman, Safety Industries, Inc.

IACCARINO, CARL J. — *Mathematics*
A.S., New Haven College
Development and Standards Engineer, J-B-T Instruments, Inc.

JENSEN, JACK W. — *English*
B.S., University of Minnesota
Yale Divinity School

JOHANNSEN, COURTLAND E. — *Philosophy*
B.A., M.A., University of Iowa — *Illumination*
Advanced Study, Yale University

KIRK, WILLIAM F. — *Metallography*
B.M., New York University; M.S., in Metal Eng., New York University
Tech. Specialist, Olin Mathieson, Nuclear Fuel Division

KOSSACK, CARL R. *Mathematics*
B.S., M.A., Yale University
Assistant Professor of Mathematics, New Haven State Teachers College

KUSLAN, LOUIS I. *Modern Science*
B.S., University of Connecticut; M.A., Yale University
Ph.D., Yale University

LANDINO, ALBERT A. *Mathematics*
B.S., Civil Engineering, University of Connecticut
Highway Engineer, P.W. Gonovese & Assoc.

LANGEWISCH, PAUL I. *Physics*
B.S. in E.E., Bucknell University
Superintendent of Distribution, Center Division,
The United Illuminating Company

LYONS, WILLIAM J., JR. *Electrical Engineering*
S.B., Electrical Engineering, Mass. Institute of Technology
Engineer, Southern New England Telephone Company

MARTIN, EVERETT W. *Industrial Safety*
B.S., Harvard University
Director of Educational Projects, Liberty Mutual Insurance Company

MCDONALD, RICHARD A. *Electrical Engineering*
B.E., M. Eng., Yale University
Electrical Engineering, Yale University

MCGREGOR, ROBERT M. *Management Survey*
B.A., University of Maine *Production Control*
Manufacturer's Representative, J-B-T Instruments, Inc.

MCKERNAN, GERALD *Literature*
B.A., College of the Holy Cross
Public Relations, International Paper Company

MICHAELS, KENNETH G. *Mathematics*
B.S. Ed., Teachers College of Connecticut, New Britain
Mathematics Instructor, North Haven High School

NORDQUIST, ROGER F. *English*
B.A., Park College
Yale Divinity School

NOWAK, GEORGE J. *Accounting*
B.S., American International College; M.B.A., Wharton School of Finance, University of Pennsylvania; Certified Public Accountant

OAKLANDER, HAROLD — *Conference Leadership*
B.S., Cornell University
School of Industrial Administration, Yale University

O'DEA, JOHN J. — *Accounting*
B.B.A., St. Bonaventure University
Auditor, The Colonial Trust Company, Waterbury

OFFREDI, GENE T. — *Accounting*
B.S., University of Connecticut
Auditing and Methods, The United Illuminating Company

ORLANDO, ROCCO — *Mathematics*
B.A., University of Connecticut
B.S., New Haven State Teachers College
M.A., Fairfield University
Principal, Regional Junior High School, Orange

PORT, JOHN — *Metallurgical Engineering*
B.S., Lafayette College
Research Laboratories, Chase Brass and Copper Company

REID, RICHARD M. — *Management Survey*
B.S., Ursinus College
Assistant Manager, Industrial Tape Division, Seamless Rubber Company

REIMER, RICHARD — *Accounting*
B.B.A, University of Commerce, Vienna; M.S., Columbia University
C.P.A., State of Connecticut
Ernst & Ernst

REITER, STANLEY F. — *Metallurgical Engineering*
B.M.E., Cornell University; M. Eng., D. Eng., Yale University
Technical Manager, Rome Fastener Corporation

RIELLO, ACHILLE — *Speech*
B.S., Emerson College; M.A., New York University
Speech Correctionist and Hearing Therapist, Board of Education,
City of New Haven

RUCHKIN, DANIEL S. — *Electrical Engineering*
B.E., M.S., Yale University
Dunham Laboratory, Yale University

SALMON, JOHN H. — *Machine Design*
B.E., Yale University
Assistant Mechanical Engineer, The United Illuminating Company

SANDOMIRSKY, ALEXANDER G. — *Mechanical Engineering*
B.S., M.A., Cambridge University
Chief Engineer, B. F. Goodrich Sponge Products Division

SCHAEFER, GEORGE — *Sales and Marketing*
B.S., University of Rochester
Sales Representative, Insulite Division of the Minnesota and Ontario Paper Company

SEAMAN, AYRES C. — *Mechanical Engineering*
B.S., C.E., Swarthmore College
Structural Engineer, Wescott and Mapes, Inc.

SEDGEWICK, ATWOOD F. — *Electrical Engineering*
M.E., Stevens Institute
Chief Elec. Engineer, The United Illuminating Company

SELIN, IVAN — *Electrical Engineering*
B.E., M. Eng., Yale University

SMITH, P. A. — *Chemistry*
Ph.B. Chemistry, Yale University

SPANG, H. AUSTIN III — *Mathematics*
B.E., M. Eng., Yale University
Elect. Eng. Lab. Assistant, Yale University

STOLWYJCK, JAN — *Electrical Engineering*
M.S., Ph.D., Wageningen University, Holland
Research Engineer, John R. Pierce Foundation

STONE, HARRIS D. — *Engineering Drawing*
A.B., Brown University
Asst. Tax Assessor, North Haven

SUCHY, ANTHONY J. — *Office Organization and Management*
A.S., New Haven College
Comptroller, Connecticut Blue Cross

TIERNAN, GEORGE R. — *Law*
B.A., Yale University; L.L.B., Cornell University
Attorney-at-Law, Prosecuting Attorney of Court of Common Pleas

TUCKER, GENE M. — *English*
B.A., McMurry College, Texas
Yale Divinity School

WAINGROW, HOPE G. — *Reading*
B.A., Cornell University; M.A., Pennsylvania State University

WALKER, CARLTON — *Electrical Engineering*
B.S., University of Illinois
Sales Engineer, U. S. Elec. Motors, Milford

WARNER, THOMAS C., JR. *Mathematics*
B.E., Yale University; Sc.M., Massachusetts Institute of Technology

WATSON, PHILIP B. *Industrial Engineering and Management*
S.B., Massachusetts Institute of Technology

WELDON, MAUR J. *Metallurgical Engineering*
B.S., Holy Cross College; M.S., Yale University
Metallurgical Engineering, The Henry G. Thompson & Sons Company

WELLISCH, ERIC *Chemistry*
A.B., Johns Hopkins University; M.A., Columbia University
Ph.D., Purdue University
Lab. Instructor, Olin Mathieson Chemical Corp.

WILTON, JOSEPH *Metallurgical Engineering*
S.B., Massachusetts Institute of Technology
Chief Metallurgist, Wallingford Steel Company

YOUDEN, ROBERT H. *Electrical Engineering*
S.B., Massachusetts Institute of Technology
Applications Engineer, Sperry Semiconductor Division

DAYTIME COOPERATIVE PROGRAM

Faculty, 1958-1959

ARNOLD, JOSEPH J. — *Industrial Management Orientation*
B.S., New Haven State Teachers College
Assistant Chairman, Department of Industrial Engineering, New Haven College

BENNETT, STEPHEN J. — *Literature*
B.S., M.A., Columbia University
Chairman, Department of English and Basic Humanities, New Haven College

BOOTH, C. E. — *Physical Science*
Ph.B., Yale University
Registered Professional Engineer; Consultant, Westcott & Mapes, Inc.

BOWER, SHARON A. — *English*
B.A., Gustavus Adolphus College
M.A., Northwestern University

BROUWER, FREDERICK E. — *English*
B.A., Calvin College; M.A., University of Michigan
Yale University

BROWN, ROBERT L. — *Physical Science*
B.A., University of Colorado; M.A., Columbia University
Asst. Professor of Earth Science, New Haven State Teachers College

CHANIN, ROBERT H. — *Psychology*
B.A., Brooklyn College
Yale Law School

CHEN, VINCENT — *Political Science*
LL.B., National Chung Cheng University
A.M., University of Chicago; Ph.D., Yale University
Chairman of Dept., Political Science, Albertus Magnus College

ORMROD, DONALD R. — *Physical Education Basketball Coach*
B.S., University of Massachusetts
Assistant Director of Athletics, New Haven Y.M.C.A.

RAYMOND, R. F. — *Economics*
B.A., Yale University; LL.B., Yale University

ROBINSON, DAVID L. — *English*
B.A., Grove City; M.S.S., University of Buffalo
New Haven Y.M.C.A., Membership Chairman

SINGH, PREMJIT — *Sociology*
B.A., Panjab University; LL.B., Delhi University
LL.M., Yale University

WATSON, PHILIP B. — *Industrial Management*
S.B., Massachusetts Institute of Technology
Chairman, Industrial Engineering, New Haven College

DAYTIME ENGINEERING PROGRAM

1958-1959

BENNETT, STEPHEN J. — *English*
B.S., M.A., Columbia University
Chairman, Department of English and Humanities, New Haven College

BROUWER, HELEN H. — *Speech*
B.A., Wheaton College; M.A., University of Michigan

BYRNE, JOHN J. — *Mathematics*
B. E.E., Manhattan College; M. Eng., Yale University

COLTON, GEORGE W. — *Mathematics—Physics*
Ph.B., Sheffield Scientific School, Yale University
Consulting Engineer

CURRIE, ROBERT D. — *Psychology*
B.A., DePauw University
Yale Divinity School

DRESSER, W. ROBERT — *Orientation—Engineering*
S.B., Massachusetts Institute of Technology
M. Eng., Yale University
Chairman, Department of Engineering, New Haven College

FOLEY, ROBERT J. — *Economics*
A.B., Fairfield University; M.A., New York University

HUNT, LEIGH W. — *Engineering Drawing*
Former Assistant Chief Draftsman, Safety Industries, Inc.

ORMROD, DONALD R. — *Physical Education*
B.S., University of Massachusetts
Assistant Director of Athletics, New Haven Y.M.C.A.

SMITH, PHILIP A. — *Chemistry*
Ph.B., Chemistry, Yale University

STONE, HARRIS D. — *Engineering Drawing*
A.B., Brown University
Assistant Tax Assessor, North Haven

TUCKER, GENE M. — *English*
B.A., McMurry College, Texas
Yale Divinity School

DIVISION OF SPECIAL STUDIES

Faculty, 1958-1959

BANKS, J. RICHARD — *Advanced Fiction Workshop*
Columbia University
Associate Director, Yale University News Bureau

BOOTH, C. E. — *Professional Engineers Examination Refresher Course*
Ph.B., Yale University
Registered Professional Engineer; Consultant, Westcott & Mapes, Inc.

BOWER, SHARON — *Public Speaking for Business*
B.A., Gustavus Adolphus College; M.A., Northwestern University
Continuity Department, Station WNHC-TV

CHASE, A. ELIZABETH — *Ways of Looking at Art*
B.A., Radcliffe College
M.A., Yale University
Docent, Yale Art Gallery

CROKER, WILLIAM F., SR. — *Motor Freight Traffic*
University of Chicago; Hillyer College
Assistant Traffic Manager, The Adley Express Company

DREW, LOUIS E. — *General Freight Traffic*
A.B., Columbia University; New York University
Traffic Managers Institute, Inc., New York
Assistant Traffic Manager, McKesson & Robbins Company, Bridgeport

EISENMAN, ALVIN — *Graphic Arts and Design*
A.B., Dartmouth College
Typographer, Yale University Press
Associate Professor, School of Design, Yale University

FINK, RAYMOND E. — *Modern Package Design and Materials*
Technical Consultant, New Haven Board and Carton Company

FOLEY, EDWARD F., JR. — *Electroplating*
B.S., Columbia University
Vice President, Director of Research, Stratford Chemical Company, Milford

FORNAL, PETER PAUL — *Personnel Interviewing*
B.B.A., St. John's University; M.I.L.R., Cornell University
Employment Manager, American Cyanamid Company, Wallingford

GILLIES, R. J. D. — *Quality Control*
Case Institute of Technology
Operational Analysis and Control Engineer, Olin Mathieson Chemical Corporation

HEDGES, JOHN B. *General Freight Traffic Management*
B.A., University of Pittsburgh
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Chairman, Department of Industrial Engineering, New Haven College

Index

Accounting
  Associate Degree 39
  Bachelor Degree 47
  Description of Courses 54
Accreditations and Memberships 18
Administrative Staff 7
Admission and Application
  Daytime Cooperative Program 69
  Daytime Engineering Program 79
  Evening Credit Program 27
  General 17
Alumni Association 21
Art 89
Associate in Science Programs
  Accounting 39
  Business Administration 39
  Engineering
    Electrical 42
    General 41
    Industrial 43
    Mechanical 44
    Metallurgical 45
  Management 40
  Program of General Studies 38
Athletic Activities 20
Attendance Regulations 23
Bachelor of Science Programs 47
  Accounting 47
  Business Administration 48
  Industrial Engineering 50
  Industrial Engineering—Electrical Option 52
  Industrial Management 49
Board of Governors 6
Board of Trustees 6
Business Administration
  Associate Degree 39
  Bachelor Degree 48
  Courses 55
Calendar
  All Degree Programs 4
  Daytime Cooperative Program 69
  Daytime Engineering Program 80
  Evening Credit Program 26
Chemistry Courses 57, 83, 91
College-Industry Engineering Programs 85
Cooperative Program, Daytime
  See Daytime 70
Counseling and Guidance 18
Creative Thinking 89
Credit Programs
  General Description 16
Daytime Cooperative Program 70
  Admission 72
  Aims and Objectives 71
  Calendar 70
  Description of Courses 77-78
  Employment 73, 74
  Length of Program 71
  Programs of Study 76
  Relations with Cooperating Companies 73
  Requirements for Degree 73
  Scholastic Regulations 73
  Study Period 71
  Tuition and Fees 75
  Work Period 72
  Work Reports 72
Daytime Engineering Program 79
  Admission 81
  Aims and Objectives 81
  Calendar 80
  Description of Courses 83
  Location 81
  Program of Studies 82
  Scholastic Regulations 82
  Tuition and Fees 82
Dean's List 23
Description of Courses (Credit) 54
Division of Special Studies
  see Special Studies, Division of 87
Divisions of the College 16
Drawing and Design Courses 57, 90, 91
Economics Courses 58
Electrical Courses 58, 90, 91
Electrical Engineering
  Associate Degree Program 42

Electroplating 91

Engineering
- College-Industry Programs 85
- Daytime Program 79
- Electrical, Associate Degree Program 42
- General, Associate Degree Program 41
- Industrial
  - Associate Degree Program 43
  - Bachelor Degree Program 51
  - Description of Courses 62
- Mechanical, Associate Degree Program 44
- Mechanics Courses 60
- Metallurgical, Associate Degree Program 45
- Professional Examination Refresher 90
- Society (Engineering) 19

English Courses 61

Evening Credit Program 25-26
- Aims and Objectives 27
- Admission 27-30
- Advanced Standing 29
- Associate in Science Programs 37-46
- Bachelor of Science Programs 47-52
- Calendar 26
- Classification of Students 30
- Description of Courses 53-68
- Faculty 105-112
- Placement Service 31
- Programs of Study
  - Associate in Science 37-46
  - Bachelor of Science 47-52
- Refunds 34
- Registration 31
- Schedule of Hours 31
- Subject Load 31
- Summer Session 36
- Transfer Students 28
- Tuition and Fees 32-35

Executive Development see School of 95

Faculty 105-122

General Engineering, Associate Degree Program 41

General Information 15

General Studies, Associate Degree Programs 38

Grading System 21

Grants-in-Aid 19

History (of the College 9-13

Honors 24

Industrial Engineering
- Associate Degree Program 43
- Bachelor Degree Program 50
- Description of Courses 62

Industrial Management
- Bachelor Degree Program 49

Library 21

Loans 19

Management Program, Associate Degree 40

Management, Industrial Program Bachelor Degree 49

Map 2

Mathematics Courses 64

Mechanical Engineering Program, Associate Degree 44

Mechanics Courses 60

Memberships, Accreditations and 18

Metallurgical Engineering Program, Associate Degree 45

Metallurgy Courses 65

Modern Science 67

New Haven College and Yale University 17

Newspaper, Student 20

Orientation Course, Coop 78

Personnel Supervision Courses 65, 90

Philosophy Courses 66

Probation 22-23

Physical Education, Coop & DEP 78

Physics Courses 67

Psychology Courses 67

Political Science, Coop 78

Purposes and History (of the College) 9-13

Reading Center 17, 101

Refunds
Evening Credit Program 34
Daytime Cooperative Program 75
Requirements for the Degree 24
Scholarships and Grants-in-Aid 19
Scholastic Regulations 21
School of Executive Development 95
Admission 96
Advisory Committee 99
Application 97
Courses of Study 97, 98
General Description 17
Origin and Purpose 96
Organization of the Program 97
Schedule of Hours 96
Tuition 97
Science, Modern 67
Social Activities 20
Social Studies Courses 67
Special Studies, Division of
Admission Requirements 88
Aims 88
Certificate Requirements 88
Description of Courses 89
General Description 16
Registration Procedure 88
Schedule of Hours 88
Standing Committees
Board of Governors 7
Staff 7
Student Council 19
Student Newspaper 20
Student Personnel Services 18
Summer Session 36
Testing 18
Transfer Students 24
Transferability of Credit 18
Tuition and Fees
Daytime Cooperative Program 69
Daytime Engineering Program 79
Evening Credit Program 32-35
Tuition Loan Funds 19
Veterans 20-21
Yale University, and New Haven College 17
Y.M.C.A. Privileges 20

CALENDAR FOR 1959

JANUARY

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CALENDAR FOR 1960

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DECEMBER

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NEW HAVEN COLLEGE
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